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DEALING WITH DISRUPTION: EMERGING APPROACHES TO FINTECH REGULATION

Saule T. Omarova*

INTRODUCTION

"Fintech" is a loosely defined term for "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."[1] As a practical matter, it denotes a rapidly evolving universe of various digital assets, technologies, and infrastructures that are collectively transforming the operation of today's financial markets. Technology is changing the way people make payments, manage investments, borrow funds, and enter into contracts.[2] Technology companies, big and small, are entering the market for financial services, changing the structural configuration and dynamics in those markets.[3] Incumbent financial institutions are hiring cryptographers and computer

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1. *See* FIN. STABILITY BD., FINANCIAL STABILITY IMPLICATIONS FROM FINTECH 7 (2017), http://www.fsb.org/wp-content/uploads/R270617.pdf [https://perma.cc/2VJB-Z53E]. While acknowledging the imprecise nature of this broad term, this article does not seek to enter the definitional debate. For a more detailed overview of fintech, see Saule T. Omarova, *New Tech v. New Deal: Fintech as a Systemic Phenomenon,* 36 YALE J. ON REG. 735, 743-746 (2019) [hereinafter *New Tech v. New Deal*].

2. *See* Trevor Dryer, *Five Trends Shaping Fintech into 2020*, FORBES (Sept. 9, 2019), https://www.forbes.com/sites/forbesfinancecouncil/2019/09/09/five-trends-shaping-fintech-into-2020/#22de06002f13 [https://perma.cc/L8JY-D9LE].

3. *See* Jeffrey Dastin, *Amazon Lent $1 Billion to Merchants to Boost Sales on its Marketplace*, REUTERS (June 8, 2017), https://www.reuters.com/article/us-amazon-com-loans-idUSKBN18Z0DY [https://perma.cc/86SC-B8LC]; Michael del Castillo, *Facebook Reveals Cryptocurrency Plans for Two New Revenue Streams*, FORBES (June 18, 2019), https://www.forbes.com/sites/michaeldelcastillo/2019/06/18/facebook-cryptocurrency-everything-every-business-leader-needs-to-know/#608d537d7a31 [https://perma.cc/5WDF-RG46]; Press Release, Apple, Introducing Apple Card, A New Kind of Credit Card Created by Apple (Mar. 25, 2019), https://www.apple.com/newsroom/2019/03/introducing-apple-card-a-new-kind-of-credit-card-created-by-apple/ [https://perma.cc/75L5-7E73].

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scientists in an effort to stay competitive and to retain, or regain, their market advantage.[4]

It is not surprising, therefore, that the rise of fintech in the last decade poses a wide range of legal and regulatory challenges. Financial regulators around the globe are grappling with complex questions of law and policy presented by fintech applications.[5] Some of the most immediately pressing issues, for example, concern the economic functions and corresponding regulatory status of specific tech-driven financial instruments.[6] These definitional questions are key to expanding specific regulators' jurisdiction to include these new and unfamiliar products and services. Furthermore, there is often a great deal of uncertainty around the reliability and governance of the new types of market infrastructure that these new products and services demand. Issues of consumer and investor protection, financial crime prevention, and enforcement of anti-money-laundering rules also acquire renewed significance in this new context.[7]

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4. *See* Anna Irrera, *JPMorgan Chase Revamps Entry-Level Tech Program in Race for Talent*, REUTERS (Aug. 9, 2018), https://www.reuters.com/article/us-jpmorgan-tech/jpmorgan-chase-revamps-entry-level-tech-program-in-race-for-talent-idUSKBN1KU2JR [https://perma.cc/T247-BZ3E].

5. *See, e.g.*, FIN. STABILITY BD., FINTECH CREDIT: MARKET STRUCTURE, BUSINESS MODELS AND FINANCIAL STABILITY IMPLICATIONS (May 22, 2017), http://www.fsb.org/wp-content/uploads/CGFS-FSB-Report-on-FinTech-Credit.pdf [https://perma.cc/CLT9-C9TK]; U.K. CRYPTOASSETS TASKFORCE, FINAL REPORT (2018), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf [https://perma.cc/PR5S-293Y]; WORLD ECON. FORUM, REALIZING THE POTENTIAL OF BLOCKCHAIN: A MULTISTAKEHOLDER APPROACH TO THE STEWARDSHIP OF BLOCKCHAIN AND CRYPTOCURRENCIES (2017), http://www3.weforum.org/docs/WEF_Realizing_Potential_Blockchain.pdf [https://perma.cc/P2LH-BPTX]; John Schindler, *FinTech and Financial Innovation: Drivers and Depth* (Fed. Reserve Fin. & Econ. Discussion Series Paper No. 2017-081, 2017), https://www.federalreserve.gov/econres/feds/files/2017081pap.pdf [https://perma.cc/3A9Y-QH7N].

6. *See, e.g.*, CLIFFORD CHANCE, THE TREATMENT OF CRYPTOTOKENS AT ENGLISH LAW: BACK TO THE FUTURE (July 2019), https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2019/07/the-treatment-of-cryptotokens-at-english-law-back-to-the-future.pdf [https://perma.cc/DF43-JRS3]; Jacquelyn Jaeger, *SEC Seeks to Thwart Cryptocurrency Masquerading as ICO*, COMPLIANCE WEEK (Oct. 17, 2019), https://www.complianceweek.com/regulatory-enforcement/sec-seeks-to-thwart-cryptocurrency-masquerading-as-ico/27896.article [https://perma.cc/2S7F-XUSK]; Paul Vigna & Dave Michaels, *Are ICO Tokens Securities? Startup Wants a Judge to Decide*, WALL ST. J. (Jan. 27, 2019), https://www.wsj.com/articles/are-ico-tokens-securities-startup-wants-a-judge-to-decide-11548604800.

7. *See supra* notes 5-6; FIN. ACTION TASK FORCE, VIRTUAL CURRENCIES: KEY DEFINITIONS AND POTENTIAL AML/CFT RISKS (2014), https://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf [https://perma.cc/SUA4-4NWE].

In the background of the legal and regulatory debates on these and other regulatory scheme-specific questions, the more fundamental questions of systemic risk and financial stability, monetary policy, and structural shifts in the broader economy are beginning to occupy a more prominent place on legislators' and regulators' fintech agenda. Answering these "big" questions, however, requires a different—more deliberately systemic and macro-level—thinking about fintech and its implications for public policy.[8] Given the enormity of that task, the search for these answers is inevitably a complex and gradual process, which is bound to take a variety of forms in different jurisdictions.

At this early stage in the process, it is difficult to provide a detailed analysis of all fintech-related regulatory developments around the globe. It is nevertheless helpful to identify some of the key features that most such developments appear to have in common. It is with this goal in mind that this symposium article examines the emerging regulatory responses to fintech disruption. Focusing primarily on the U.S. experience to date, the article offers a rough three-part taxonomy of principal approaches to fintech taken by financial regulators: what I call the "experimentation" approach, the "incorporation" approach, and the "accommodation" approach.

It is important to note that the purpose of this exercise is not to enumerate in exhaustive detail all regulatory activities that target or affect fintech, but to develop a conceptual framework for making sense of such measures as constitutive elements of an evolving *philosophy* of fintech regulation.[9] In the academic literature and industry debate, this gradually emerging regulatory philosophy is frequently discussed under a loose label of "smart" regulation: iterative, flexible, carefully tailored, risk-sensitive, and innovation-friendly.[10] Today, this notion of "smart" regulation remains more of an aspiration than an actual regulatory model. At the same time, the

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8. For an in-depth discussion of the factors necessitating, and basic principles underlying, such a deliberately macro-systemic regulatory paradigm, see Saule T. Omarova, Technology v. Technocracy: Fintech as a Regulatory Challenge (Sept. 30, 2019) (unpublished manuscript) (on file with the Washington University Journal of Law and Policy).

9. For example, the article does not discuss regulatory agencies' decisions with respect to legal categorizations of specific technologies or fintech products as "securities," "commodities," etc. Nor does it examine the ongoing legislative and regulatory efforts to revise existing rules governing specific types of commercial transactions or regulated financial services, in order to accommodate the growth of fintech markets. While undeniably important, these measures generally operate on a more granular level.

10. *See infra* Part I.

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normative ideal behind this metaphor is gradually seeping into, and molding, the regulatory adaptation to the massive digitization of finance.[11] Analyzing the currently emerging methods of such regulatory adaptation, therefore, lays the necessary foundation for an important public policy discussion on whether it is the *right* ideal.

The article proceeds as follows. Part I provides the necessary context and conceptual framing for the discussion by elucidating the systemic significance of, and the need for a concerted regulatory response to, the ongoing fintech disruption. Parts II through IV identify and examine three broadly drawn categories of the emerging regulatory approaches to fintech. Part II begins by analyzing the increasingly popular practice of experimenting with so-called "regulatory sandboxes." Part III focuses on the current efforts to incorporate new tech-driven financial service providers into the existing regulatory regime by issuing special fintech charters or licenses. Part IV discusses the diffuse strategy of regulatory accommodation of new technologies, including the rise of so-called "regulatory technology," or RegTech. Finally, the conclusion outlines some of the broad themes emerging out of this taxonomic exercise.

I. FINTECH AS A REGULATORY DISRUPTION: OVERVIEW

In the popular and expert discourses alike, fintech developments are routinely praised for their potential to (1) increase the efficiency of financial transactions; and (2) expand access to financial services.[12] The key benefit of applying new digital technologies to finance is that it promises to eliminate transactional frictions that increase the costs of transacting in today's financial markets. Making financial transactions faster, easier, and cheaper, in turn, unlocks new opportunities for financial inclusion and

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11. *See infra* Parts II-IV.

12. *See, e.g.*, Jeff Horowitz & Eric Scro, *Creating an Open Financial System and Why Institutionalization is Key*, *in* KPMG, INSTITUTIONALIZATION OF CRYPTOASSETS 11 (2018), https://assets.kpmg/content/dam/kpmg/us/pdf/2018/11/institutionalization-cryptoassets.pdf [https://perma.cc/YPT6-PBEA] (arguing that crypto may help overcome some of the most fundamental problems of the global financial system); *Financial Technology – Fintech*, INVESTOPEDIA, https://www.investopedia.com/terms/f/fintech.asp [https://perma.cc/9DPN-RJU8] (stating that fintech firms are designed to challenge traditional financial institutions by "being more nimble, serving an underserved segment or providing faster and/or better service.").

expanded access to financial services.[13] In this sense, fintech seems poised to disrupt financial markets' operations not only as a matter of transactional efficiency but also as a matter of "democratization" of finance.[14]

Private cryptocurrencies provide one of the most visible examples of such disruption.[15] The first cryptocurrency to go mainstream was Bitcoin, an online communication protocol that enables the use of bitcoins—electronic tokens or bits of data—as a means of payment and exchange similar to regular currencies.[16] Importantly, innovative blockchain technology—or, more broadly, distributed ledger technology (DLT)—underlying Bitcoin's and multiple other cryptocurrencies' operation offers potentially significant transactional benefits in optimizing payments, as well as clearing and settlement of trades in a much wider range of traditional financial instruments. Digital crowdfunding[17] and robo-advising[18] provide another set of examples of using new technologies, including artificial intelligence (AI) and "big data" analytics, to broaden access to financial services beyond the narrow band of the wealthy and the privileged.

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13. *See* Horowitz & Scro, *supra* note 12.

14. *See New Tech v. New Deal, supra* note 1 at 745.

15. For a comprehensive analysis of cryptocurrencies and legal issues they raise, see ROSA MARIA LASTRA & JASON GRANT ALLEN, VIRTUAL CURRENCIES IN THE EUROSYSTEM: CHALLENGES AHEAD, ECON Monetary Dialogue Study 23-24 (2018), http://www.europarl.europa.eu/cmsdata/150541/DIW_FINAL%20publication.pdf [https://perma.cc/M97J-W7SG].

16. For more on Bitcoin generally, see PRIMAVERA DE FILIPPI & AARON WRIGHT, BLOCKCHAIN AND THE LAW (2018); NATHANIEL POPPER, DIGITAL GOLD: BITCOIN AND THE INSIDE STORY OF THE MISFITS AND MILLIONAIRES TRYING TO REINVENT MONEY (2015); PAUL VIGNA & MICHAEL J. CASEY, THE AGE OF CRYPTOCURRENCY: HOW BITCOIN AND DIGITAL MONEY ARE CHALLENGING THE GLOBAL ECONOMIC ORDER (2015); KEVIN WERBACH, THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST (2018).

17. The two key examples of digital crowdfunding are "initial coin offerings" (ICOs) and marketplace lending (MPL). The term "ICO" refers generally to transactions in which firms raise capital online by issuing digital tokens, or "coins," that carry various rights with respect to some future digital product or service the issuing firms intend to finance and develop. *See New Tech v. New Deal*, *supra* note 1, at 784-786. The term "MPL" is defined broadly as "any practice of pairing borrowers and lenders through the use of an online platform without a traditional bank intermediary." *Marketplace Lending, in* 12 Supervisory Insights, FDIC Supervisory Insights 12 (Winter 2015), FDIC SUPERVISORY INSIGHTS (Winter 2015), https://www.fdic.gov/regulations/examinations/supervisory/insights/siwin15/si_winter2015-article02.pdf [https://perma.cc/J7MN-RKXA].

18. "Robo-advising" refers to the increasingly popular practice of providing automated investment advice and asset management services using algorithms and asset-allocation models tailored to individual investors' needs and preferences. *See New Tech v. New Deal, supra* note 1, at 787-789.

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It is, of course, easy to stipulate both the efficiency-enhancing and access-expanding benefits of fintech, at least in theory. As I have argued elsewhere, however, this perspective reflects a fundamentally micro-transactional view of fintech and its systemic implications.[19] In the current discourse, the pros and cons of specific technological advances are examined predominantly, if not entirely, through the lens of their potential impact on the transacting counterparties' costs, convenience, or market access.[20] This perspective inevitably obscures the deeper systemic significance of fintech as a potential disruption of the fundamental political arrangement underlying the operation of the modern financial system.[21]

This arrangement—which I have previously dubbed the "New Deal settlement in finance"—institutionalizes certain politically derived judgments about the optimal balance of private freedom and public control in the financial market.[22] Under its terms, private market actors retain control over substantive decisions on how to allocate financial capital to various productive uses. This is so because of their (putatively) superior ability to gather and process vital market information at the micro-level.[23] The public, on the other hand, bears the primary responsibility for modulating credit-money aggregates and maintaining the overall stability of the financial system. This modulating role enables markets to function smoothly and efficiently.[24] From this perspective, financial regulation emerges as the key mechanism through which the public manages the moral hazard built into the New Deal settlement in finance. In essence, regulation constrains private market participants' ability to generate excessive system-wide risks in pursuit of private profits.[25]

Today's most popular and visible fintech applications—including cloud computing, AI, big data analytics, blockchain and crypto-tokens, and smart

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19. *Id.* at 739-40.
20. *Id*.
21. *Id.* at 740.
22. *Id.* at 746-47.
23. For an in-depth discussion of this fundamental public-private division of powers in modern finance, see Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143, 1149 (2017); *New Tech v. New Deal, supra* note 1, at 740.
24. *See* Hockett & Omarova, *supra* note 23, at 1149.
25. *See id.* (arguing that government regulation is the mechanism for preventing the over-generation of credit-money by private financial institutions to which the sovereign delegated the allocative, and thus credit-generative, functions).

contracts—tend to amplify the ability of private market actors to generate and trade financial risks.[26] By making transactions in financial markets nearly instantaneous and frictionless, new technologies enable private market participants to engage in the continuous synthesizing of digital assets tradable in potentially infinitely scalable virtual markets. Accordingly, what is commonly extolled as fintech's principal micro-level benefit—its ability to eliminate transactional frictions and to create a virtually seamless marketplace—also magnifies the system's overall capacity to fuel financial speculation on an unprecedented scale.[27] Thus, the principal source of macro-level risk posed by fintech is its (still poorly understood) power to exacerbate the financial system's dysfunctional boom-and-bust dynamics.[28]

Importantly, however, these technological advances do not simultaneously—or proportionately—amplify the sovereign public's ability to control the explosive growth of private liabilities and risk-creation in the system. As a result, the faster, bigger, algorithm-driven, and tech-dominated financial market poses a fundamental regulatory challenge. Financial regulators are increasingly facing complex technical and distributional issues in a rapidly evolving context. And, all too often, they have no legal or regulatory tools for dealing with these issues in a comprehensive manner.

In this sense, the fintech disruption invites a potentially decisive shift in the inherently unstable public-private balance in modern finance. On the one hand, the fintech era presents a unique set of opportunities to correct the destabilizing structural asymmetry between private actors' freedom to generate financial risks and the sovereign public's ability to accommodate them. On the other hand, new technologies may also be used in ways that further magnify this asymmetry and thus exacerbate the financial system's present dysfunctions.[29]

In this context, it is critically important to develop a comprehensive, effective, and normatively unified regulatory strategy for managing technology-driven changes in financial markets. Recognizing this imperative, numerous regulatory agencies around the world are studying

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26. For a detailed discussion, *see New Tech v. New Deal, supra* note 1.
27. *Id*. at 742.
28. *Id.* at 755.
29. *See id.* at 742. For a theoretical account of the financial system's structural dysfunctions, see Hockett & Omarova, *supra* note 24.

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fintech developments, soliciting public comments, and issuing informal guidance on various issues raised by specific financial technologies.[30] In many countries, a wide range of special taskforces and interagency groups are formed for these very purposes.[31] Regulators are cooperating with practicing lawyers and academic experts in an effort to figure out whether, and how, to adapt various specific regulatory requirements to the new market realities. Lawmakers are conducting hearings and commissioning reports in contemplation of future legislative action.[32]

Yet, financial regulators are generally reluctant to take assertive action with respect to fintech, for fear of prematurely "stifling" financial innovation.[33] As the industry continues to develop and commercialize new tech products, financial regulators remain predominantly in the role of outside observers.[34] The novelty and technical complexity of these

30. *See, e.g.,* Cong. Res. Serv., *Financial Innovation: Reducing Fintech Regulatory Uncertainty*, (Apr. 25, 2019), https://fas.org/sgp/crs/misc/IF11195.pdf [https://perma.cc/29M9-RXW9] (describing recent U.S. policy initiatives aiming at reducing regulatory uncertainty with respect to fintech); Lee Reiners, *How Regulators Are Responding to Fintech*, THE FINREG BLOG (June 29, 2018), https://sites.duke.edu/thefinregblog/2018/06/29/how-regulators-are-responding-to-fintech/ [https://perma.cc/F2D6-AG7U].

31. *See* Press Release, U.S. House Comm. on Fin. Servs., Press Release: Waters Announces Committee Taskforces on Fintech and Artificial Intelligence (May 9, 2019), https://financialservices.house.gov/news/documentsingle.aspx?DocumentID=403738 [https://perma.cc/K5TV-8LSD]; *Task Force on Financial Technology*, EUR. COMM'N (Mar. 28, 2017), https://ec.europa.eu/newsroom/fisma/item-detail.cfm?item_id=56443 [https://perma.cc/XN7Y-DEEA]; Anastas Chobanov, *ECB Creates Innovation Hub to Focus on Fintech Research*, CHAINBULLETIN.COM (Nov. 12, 2019), https://chainbulletin.com/ecb-creates-innovation-hub-to-focus-on-fintech-research/ [https://perma.cc/QK8B-SC25].

32. *See Examining the Fintech Landscape: Hearing Before the S. Comm. on Banking, Housing, and Urban Affairs*, 115th Cong. (Sept. 12, 2017); Barbara S. Mishkin, *House and Senate to Hold Hearings on Fintech, Artificial Intelligence*, BALLARD SPAHR CONSUMER FIN. MONITOR (June 24, 2019), https://www.consumerfinancemonitor.com/2019/06/24/house-and-senate-to-hold-hearings-focused-on-fintech-artificial-intelligence/ [https://perma.cc/JZ7X-5JM6].

33. This does not refer to enforcement actions against specific fintech companies found to have violated specific laws and regulations, or the few instances of governments banning specific cryptocurrencies or token offerings. *See* Darryn Pollock, *From Gibraltar to Australia: How Countries Approach ICOs*, COINTELEGRAPH (Feb. 16, 2018), https://cointelegraph.com/news/from-gibraltar-to-australia-how-countries-approach-icos [https://perma.cc/H8QY-TBUT].

34. *See, e.g.,* Meyer Aaron, Francisco Rivadeneyra and Samantha Sohal, *Fintech: Is This Time Different? A Framework for Assessing Risks and Opportunities for Central Banks* 3 (Bank of Canada Staff Discussion Paper 2017-10, July 2017), https://www.bankofcanada.ca/wp-content/uploads/2017/07/sdp2017-10.pdf [https://perma.cc/THR4-3MGC] (stating that "at the moment the best response of central banks is to monitor fintech to form a view on its risks and opportunities, by providing access to the infrastructures central banks control").

developments make this cautious approach appear sensible. In large part, however, this reactive posture reflects the fundamental limitations of the presently dominant technocratic model of financial regulation. This model not only systematically prioritizes technical expertise over normative commitment, but it also prioritizes a micro-transactional perspective over a macro-structural outlook. The principal methods of technocratic regulation involve identifying and isolating discrete micro-level phenomena and decision points, and targeting specific market inefficiencies with the help of minimally invasive technical tools.

These built-in biases are clearly manifested in the structural compartmentalization of financial regulation. Thus, the current system is built on regulating individual financial firms, licensed and supervised under clearly identified regimes, based on the types of products they offer and activities they engage in.[35] The regulatory boundaries among financial institutions (banks, securities broker-dealers, insurers, etc.) and financial products (securities, banking products, insurance, commodity futures, etc.) are drawn in clear categorical terms.[36] Within each regulatory silo, the relevant agency operates under a specific legislative mandate and pursues a specific set of policy priorities, which reflect the core risks posed by the specific regulated activities and entities.[37]

Fintech developments defy the key assumptions underlying this technocratic philosophy of financial regulation. In the tech-driven financial market, it is often impossible to draw clear categorical lines between different products and services. In fact, many recent innovations in finance are designed specifically to overcome traditional regulatory boundaries,

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35. *See* Saule T. Omarova, *One Step Forward, Two Steps Back? The Institutional Structure of U.S. Financial Services Regulation After the Crisis of 2008*, *in* INSTITUTIONAL STRUCTURE OF FINANCIAL REGULATION: THEORIES AND INTERNATIONAL EXPERIENCES 137 (Robin Hui Huang & Dirk Schoenmaker eds., 2014); U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-05-61, FINANCIAL REGULATION: INDUSTRY CHANGES PROMPT NEED TO RECONSIDER U.S. REGULATORY STRUCTURE (2004); GROUP OF THIRTY, THE STRUCTURE OF FINANCIAL SUPERVISION: APPROACHES AND CHALLENGES IN A GLOBAL MARKETPLACE (2008).

36. For a detailed discussion, see Omarova, *supra* note 8, at 9.

37. *See id*. This type of administrative fragmentation is very specific to the United States. That, however, should not obscure the bigger point about structural compartmentalization as the key element of the technocratic regulatory philosophy, more generally. Thus, even in jurisdictions with less fragmented bureaucratic systems, different financial products and markets (securities, banking, insurance, and so on) are typically supervised and regulated under substantively and operationally different regimes. *Id.*

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which make financial transactions slower and more expensive.[38] Given the fluidity and functional flexibility of technological solutions, it is extremely difficult to identify, measure, and target precisely the specific facets of fintech products' operation and design, especially via familiar regulatory tools and methods.[39]

By putting increasing pressure on the existing regime of financial regulation and supervision, the rise of fintech exposed the need for revisiting the broader regulatory philosophy underlying and guiding that regime. Today, however, there is little clarity on what that new, fintech-ready regulatory philosophy should look like. To the extent there is a discussion of the high-level principles suitable for regulating the risks posed by fintech, it generally seems to evolve around the familiar metaphor of "smart" regulation.

The idea of "smart" regulation predates not only the fintech era, but also the global financial crisis of 2008.[40] It is a variation on the broader concept of "New Governance," which became very popular in academic and policy discussions in the pre-crisis period.[41] In the context of the current debate on fintech, "smart" regulation is generally described as a sequenced set of "proportionate" regulatory responses to identified fintech-driven risks, which explicitly aim to facilitate and support financial innovation.[42] Today's proponents of "smart" regulation typically emphasize—explicitly or, more often, implicitly—the technically precise, data-driven, market-friendly, and pragmatic nature of this philosophy.[43] Among other things, a "smart" approach to fintech regulation requires a much more aggressive

38. *See* FIN. STABILITY BD., CRYPTO-ASSETS: WORK UNDERWAY, REGULATORY APPROACHES AND POTENTIAL GAPS 8-9 (2019), https://www.fsb.org/wp-content/uploads/P310519.pdf [https://perma.cc/Q3NZ-5KEA].

39. *Id*. at 19, 38.

40. *See, e.g.,* NEIL GUNNINGHAM & PETER GRABOSKY, SMART REGULATION: DESIGNING ENVIRONMENTAL POLICY (1998) (advancing and advocating the concept of "smart" regulation).

41. For an intellectual history of the New Governance movement, see CRISTIE FORD, INNOVATION AND THE STATE: FINANCE, REGULATION, AND JUSTICE 91-96 (2017).

42. *See, e.g.,* Cary Coglianese, *Optimizing Regulation for an Optimizing Economy*, 4 U. PA. J.L. & PUB. AFF. 1 (2018); Dirk A. Zetzsche, Ross P. Buckley, Janos N. Barberis & Douglas W. Arner, *Regulating Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 FORDHAM J. CORP. & FIN. L. 31 (2017);

43. *See* Zetzsche et al., *supra* note 42, at 50-53; Mark D. Fenwick, Wulf A. Kaal, Erik P.M. Vermeulen, *Regulation Tomorrow: What Happens When Technology Is Faster than the Law?* 6 AM. U. BUS. L. REV. 561 (2017).

tailoring of regulatory requirements to the unique features of each specific fintech product or activity.[44] The regulators are, therefore, expected to pursue continuous micro-optimization and customization of legal rules to fit individual fintech products or activities on their own terms.[45] In short, being "smart" is generally taken to mean "regulating just enough and in the right ways."[46]

While providing few details on how one figures out which measures are "proportionate" and "right" in any particular context, this framing of what constitutes a "smart" regulatory strategy in the fintech era is inherently transaction-oriented and guided by specific technologies. This makes it an easy sell from the perspective of regulatory continuity. In fact, the general philosophy of "keeping up with" fintech by adjusting to its pace on a technology-by-technology basis already appears to shape the overall trajectory and tone of most regulatory responses to fintech.

On an institutional level, this underlying attitude translates into an explicit regulatory prioritization of the efforts to cooperate with, learn from, and assist financial institutions and fintech firms—among other things, by providing them with greater regulatory certainty and "sensible paths to compliance."[47] To this end, financial regulators strive to facilitate direct engagement with the industry in a much closer and institutionally salient manner. Thus, in 2015, the Office of the Comptroller of the Currency (OCC)—the federal chartering and regulatory authority for national banks—launched an agency-wide Responsible Innovation Initiative, focused on fintech developments.[48] The newly established OCC Office of Innovation now serves as the hub for the agency's fintech-related

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44. Emphasizing the narrowly tailored, transactional data-driven nature of this regulatory approach to fintech, some observers describe it as a form of "responsive" regulation. *See* Fenwick *et al., supra* note 43.

45. Coglianese, *supra* note 42, at 2 ("An ever optimizing economy depends on an equally ever optimizing regulation.").

46. *Id*. at 13.

47. *See* Jonathan Rohr & Aaron Wright, *Blockchain-Based Token Sales, Initial Coin Offerings, and Democratization of Capital Markets*, 70 HASTINGS L. J. 463, 511-16 (2019).

48. *See Responsible Innovation*, OFFICE OF THE COMPTROLLER OF THE CURRENCY, https://www.occ.gov/topics/responsible-innovation/index-innovation.html [https://perma.cc/PLN5-E94Z]; OFFICE OF THE COMPTROLLER OF THE CURRENCY, OCC INNOVATION PILOT PROGRAM 1 (2019), https://www.occ.gov/topics/supervision-and-examination/responsible-innovation/occ-innovation-pilot-program.pdf [https://perma.cc/HGV3-TSBW].

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activities.[49] The Consumer Financial Protection Bureau (CFPB), in turn, created its Office of Innovation in July 2018, in order to promote "consumer-beneficial innovation."[50] The Commodity Futures Trading Commission (CFTC) set up LabCFTC, a fintech-focused hub designed to make CFTC "more accessible to FinTech innovators," to promote "responsible innovation," and to facilitate the agency's information-gathering and fintech-related education.[51] Individual states and even cities around the country are establishing their own fintech innovation hubs.[52] Outside of the United States, numerous national and international bodies are also actively pursuing the innovation hub strategy.[53]

In terms of *substantive* policies, several potential choices are currently moving to the center of the financial regulators' fintech agenda. These include, most prominently, regulatory experimentation with sandboxes and special chartering regimes aimed at giving fintech firms a controlled path toward full legitimation.[54] Additionally, RegTech strategies appear to be gaining greater visibility as a way for financial regulators to respond to the ongoing changes in the marketplace.[55] Finally, the emerging menu of regulatory responses to fintech includes a variety of seemingly more mundane, but potentially far-reaching, technical options for absorbing and providing public infrastructural support for fintech products.[56]

Accordingly, a fuller understanding of the emerging model of fintech regulation requires a more detailed examination of each of these three

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49. *See* OFFICE OF THE COMPTROLLER OF THE CURRENCY, OFFICE OF INNOVATION: A GENERAL GUIDE, https://www.occ.treas.gov/topics/responsible-innovation/occ-innovation-general-brochure.PDF [https://perma.cc/4ZNW-FVCY].

50. *See Innovation*, CONSUMER FIN. PROT. BUREAU, https://www.consumerfinance.gov/about-us/innovation/ [https://perma.cc/8G3T-A8KC].

51. *LabCFTC Overview*, U.S. COMMODITY FUTURES TRADING COMM'N, https://www.cftc.gov/LabCFTC/Overview/index.htm [https://perma.cc/9ZAT-RJRL].

52. *See* Grace Noto, *Top 5 Emerging Fintech Hubs in The U.S.*, BANK INNOVATION (Apr. 17, 2017), https://bankinnovation.net/allposts/biz-lines/payments/top-5-emerging-fintech-hubs-in-the-u-s/ [https://perma.cc/8575-QEV2].

53. *See BIS to Set Up Innovation Hub for Central Banks* (June 30, 2019), BANK FOR INT'L SETTLEMENTS, https://www.bis.org/press/p190630a.htm [https://perma.cc/QXJ4-M2D3]; EUR. SEC. & MKTS. AUTH., *FinTech: Regulatory Sandboxes and Innovation Hubs* (2018); *Fintech Knowledge Hub*, EUROPEAN BANKING AUTHORITY, https://eba.europa.eu/financial-innovation-and-fintech/fintech-knowledge-hub [https://perma.cc/28ZZ-84SQ].

54. *See infra* Parts II, III.

55. *See infra* Part IV.

56. *See id.*

regulatory strategies: experimentation, incorporation, and accommodation of technological changes.

II. THE "EXPERIMENTATION" APPROACH: REGULATORY SANDBOXES

The term "regulatory sandbox" refers to programs set up by regulatory agencies for the explicit purpose of enabling private firms to test innovative financial products and services in a controlled environment.[57] There is a great variation in the specific design and implementation of regulatory sandboxes around the world. In general, sandboxes provide a "safe space" for fintech firms and financial firms to offer real products to real customers with the benefit of a waiver, or a significant relaxation, of otherwise applicable regulations.[58] The principal reasons for establishing regulatory sandboxes include their potential to support consumer-benefitting financial innovation, facilitate financial inclusion, improve the efficiency and competitiveness of domestic financial institutions, and enhance regulators' understanding of the emerging innovative technologies.[59] In this sense, fintech sandboxes represent a clear case of the experimental learning strategy on the part of the regulators.

UK's Financial Conduct Authority (FCA) pioneered this approach in June 2016, when it set up the first fintech regulatory sandbox.[60] Any firm, financial or non-financial, can apply to participate in the FCA sandbox. Within the FCA sandbox, individual participants receive various forms of regulatory relief.[61] Such relief might include partial authorizations to conduct specific activities, or individual consultations on legal and regulatory issues arising in connection with the participating firms' business

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57. *See FInsight: Regulatory Sandboxes*, BAKER MCKENZIE: FIN. INSTS. HUB (Oct. 31, 2018), http://financialinstitutions.bakermckenzie.com/2018/10/31/finsight-regulatory-sandboxes/ [https://perma.cc/6X4U-ER7G].

58. Hilary J. Allen, *Regulatory Sandboxes,* 87 GEO. WASH. L. REV. 579, 592, 596 (2019).

59. *See* Hilary J. Allen, *Sandbox Boundaries,* VAND. J. ENT. & TECH. L. (forthcoming 2019) (manuscript at 4) (on file with author).

60. *Regulatory Sandbox*, FIN. CONDUCT AUTH., https://www.fca.org.uk/firms/regulatory-sandbox [https://perma.cc/MHB6-BXBD].

61. *Id.*

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models.[62] In 2019, well over one hundred firms have been accepted to test their products within the FCA sandbox.[63]

Australia, Switzerland, Singapore, Thailand, and several other countries quickly followed the FCA's sandbox model.[64] As the trend spread, the FCA took on a leadership role in setting up an international group of financial regulators to pursue a cross-border sandbox strategy.[65] In January 2019, the group officially launched a "global sandbox," the Global Financial Innovation Network (GFiN), intended to provide a platform for cross-border testing of fintech products.[66] As of mid-2019, GFiN accepted eight pilot projects into its program.[67]

Curiously, the United States has been slow to adopt the regulatory sandbox idea. This prompted the U.S. Treasury Department to call for speedy action in this direction as a matter of boosting the country's global competitiveness.[68] One of the immediate obstacles to adopting the sandbox strategy in the United States is its highly fragmented structure of financial oversight, with numerous federal and state regulators exercising exclusive or overlapping jurisdictional control in their respective siloes.[69] Recognizing this problem, the Treasury specifically emphasized that it is critical "not to allow fragmentation in the financial regulatory system, at both the federal and state level, to interfere with innovation."[70]

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62. *Id.;* Allen, *supra* note 58 at 596-597.

63. FIN. CONDUCT AUTH., REGULATORY SANDBOX LESSONS LEARNED REPORT (2017), https://www.fca.org.uk/publication/research-and-data/regulatory-sandbox-lessons-learned-report.pdf [https://perma.cc/V7MX-3LVY].

64. *See* Allen*, supra* note 58, at 592; Zetzsche et al., *supra* note 42, at 64-66; *see also International Guide to Regulatory Fintech Sandboxes,* BAKER MCKENZIE (2018), https://www.bakermckenzie.com/en/-/media/files/insight/publications/2018/12/guide_intlguideregulatorysandboxes_dec2018.pdf [https://perma.cc/3MGK-3P6V].

65. *Global Financial Innovation Network (GFIN)*, FIN. CONDUCT AUTH., https://www.fca.org.uk/firms/global-financial-innovation-network. [https://perma.cc/5AMU-GW6C]

66. *Id.*

67. *GFIN Cross-Border Testing Pilot – Next Steps*, FIN. CONDUCT AUTH., https://www.fca.org.uk/firms/gfin-cross-border-testing-pilot-next-steps [https://perma.cc/FFC6-KSPJ].

68. U.S. DEP'T OF THE TREASURY, A FINANCIAL SYSTEM THAT CREATES ECONOMIC OPPORTUNITIES: NONBANK FINANCIALS, FINTECH, AND INNOVATION 9 (2018), https://home.treasury.gov/sites/default/files/2018-07/A-Financial-System-that-Creates-Economic-Opportunities---Nonbank-Financi....pdf [https://perma.cc/66LZ-K6QS].

69. *Id.* at 13-14; *see also* sources cited *supra* note 35.

70. U.S. DEP'T OF THE TREASURY*, supra* note 68 at 13.

In December 2018, the CFPB—a federal agency created in the wake of the 2008 financial crisis and charged with providing integrated oversight of consumer protection across the financial sector—became the first federal agency to propose a fintech sandbox.[71] The CFPB's proposal envisioned granting the participants in the sandbox two years of immunity from enforcement by any state or federal authorities, as well as private lawsuits, for violations of consumer protection laws.[72] The industry rallied behind this idea, while a broad coalition of consumer advocates and state authorities heavily criticized CFPB's regulatory sandbox proposal for overstepping the federal agency's jurisdiction.[73]

The OCC, on the other hand, took a different experimentation path. After years of seriously considering the regulatory sandbox idea, the agency abandoned it in favor of a somewhat less permissive approach: the Innovation Pilot Program, announced in April 2019.[74] The proposed program seeks "to provide a consistent and transparent framework for eligible entities to engage with the OCC on pilots, which are small-scale, short-term tests to determine feasibility or consider how a large-scale activity might work in practice."[75] The focus of the Innovation Pilot Program is on "new or unique activities where uncertainty is perceived to be a barrier to development and implementation" and is open only to OCC-supervised entities.[76] To be eligible for participation, applicants are required to demonstrate that the proposed product has the potential to achieve at least one of the publicly beneficial goals that include meeting "the evolving needs

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71. Policy on No-Action Letters and the BCFP Product Sandbox, 83 Fed. Reg. 64,036 (proposed Dec. 13, 2018).

72. *Id.* at 64,037; Kate Berry, *Mulvaney's Last Move at CFPB Aims to Help Fintechs*, AM. BANKER (Dec. 11, 2018, 2:03 PM), https://www.americanbanker.com/news/mick-mulvaneys-last-move-at-cfpb-aims-to-help-fintechs [https://perma.cc/2RJF-LAGW].

73. *See* 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/VFK8-LM48]; Steven Harras, *States, Consumer Groups Blast CFPB's Fintech Protections*, ROLL CALL (Feb. 21, 2019, 5:02 AM), https://www.rollcall.com/news/congress/states-consumer-groups-blast-cfpbs-fintech-protections [https://perma.cc/88Z7-SBQV].

74. *See* OFFICE OF THE COMPTROLLER OF THE CURRENCY, *supra* note 49, at 2-5.

75. *Id.* at 2.

76. *Id.* at 3. OCC-supervised entities include national banks, federal savings associations, their subsidiaries, and federal branches and agencies of foreign banking organizations. Fintech firms are not eligible to enroll in the OCC program on their own. *Id.*

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of consumers, businesses, and communities," promoting financial inclusion, and reducing "significant risks to individual banks or the overall banking system."[77] At the same time, the OCC's proposed program does not provide any waivers from the applicable state or federal laws.[78] Fully cognizant of the practical importance of such waivers, the financial and tech industries joined forces in actively lobbying the OCC to incorporate an explicit immunity from liability into its program.[79]

In principle, the regulatory sandbox strategy is subject to a number of potential criticisms. One of the fundamental problems with this type of regulatory experimentation is the inherent difficulty of determining whether, and to what extent, any particular fintech product is truly novel or "innovative"—and therefore worthy of inclusion in the regulatory sandbox. On an instrumental level, evaluating the novelty and social desirability of fintech products requires financial regulators to develop or acquire sufficiently extensive and deep technical expertise. The fact that it is often impossible to separate any particular fintech product's financial functions from its technological features makes this task even more challenging for the regulators.

On a deeper level, moreover, the inquiry into the "novelty" of any particular fintech product directly implicates the broader normative question of how we define and assess "financial innovation," not simply as a matter of *private* benefit but also as a matter of *public* interest.[80] Introducing this type of a macro-level perspective, in turn, significantly complicates the seemingly technical decision regarding whether or not a particular fintech product is sufficiently "innovative" to qualify for the sandbox testing. It is not clear to what extent the regulators running fintech sandbox programs currently engage in this kind of a normatively thick analysis.

Another potential criticism of fintech sandboxes points to the downside of broad regulatory discretion with respect to admission of individual firms

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77. *Id*. at 4.

78. *Id*. at 5. The OCC may address the legality of any proposed activity within the context of the program; however, such legality has to be established before any live test. *Id*.

79. *See* Kate Berry, *OCC's Innovation Pilot Gets Little Love from Banks*, AM. BANKER (July 30, 2019, 9:00 PM), https://www.americanbanker.com/news/occs-innovation-pilot-gets-little-love-from-banks [https://perma.cc/488G-T68U].

80. For a detailed discussion, see Saule T. Omarova, *What Kind of Finance Should There Be?,* 83 L. & CONTEMP. PROBS. (forthcoming 2020).

into these experimental programs. The proponents of the more laissez-faire approach to finance, for instance, claim that regulators' power to pick and choose among the firms "distorts the market and weakens the positive effects brought by competition."[81] These critics accordingly push for greater decisional transparency and demand that financial regulators "maximize the number of firms allowed to participate in the sandbox to the greatest extent possible."[82] Of course, the practical result of such "openness" would be to relax existing regulatory requirements for everyone, thus effectively dismantling the existing system of financial regulation.

From a macro-systemic perspective, the key consequences of the regulatory sandbox strategy are even more difficult to disentangle. On the one hand, setting up a regulatory sandbox is a potentially effective way to generate usable empirical data for better regulatory decision-making. This type of regulatory learning has potentially significant long-term benefits. On the other hand, however, the efficacy of this effort depends fundamentally on the specific design features of each individual sandbox program. Thus, if the specific assessment criteria for fintech products in the sandbox insufficiently capture potentially problematic effects of these products on consumer interests or financial stability, the resulting data will not be a reliable indicator of how that product will fare outside the sandbox. Even more importantly, the inherently circumscribed nature of sandboxes may make it impossible for them to serve as an appropriate platform for testing some of the key macro-level, systemic implications of specific fintech products. In this sense, this form of regulatory experimentation may not help to predict or ameliorate the most consequential risks posed by the so-called "innovative" fintech products and services. Nor would it deepen the regulators' understanding of such risks.

III. THE "INCORPORATION" APPROACH: FINTECH CHARTERS

Special licensing or chartering of fintech firms is emerging as another popular tool of regulatory adjustment to fintech innovation. As a general

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81. Brian Knight, *Done Right, Regulatory Sandboxes Can Promote Competition,* AM. BANKER (Aug. 8, 2019, 9:00 AM), https://www.americanbanker.com/opinion/done-right-regulatory-sandboxes-can-promote-competition [https://perma.cc/3JFR-LE4U].
82. *Id.*

matter, this particular regulatory strategy seeks to augment the overall regulatory perimeter and the jurisdictional authority of individual agencies by incorporating new market entrants into the existing regulatory regimes.

In the United States, many core financial activities require special authorization and oversight by one or more financial regulators. For instance, no entity can legally engage in the "business of banking"[83] without obtaining a bank charter from the OCC or a state bank regulatory agency.[84] Securities dealing and brokerage, while not requiring a special charter, subjects relevant entities to mandatory registration and oversight by the Securities and Exchange Commission (SEC) or state securities regulators.[85] States, in turn, require businesses offering money-transmitting services to register and obtain the corresponding "money transmitter" licenses.[86]

In this context, many fintech firms' business models raise complicated questions of the potential applicability of various chartering and licensing requirements.[87] From these firms' perspectives, the main downside of obtaining a charter or a license is the higher cost of running a regulated business. On the plus side, however, having a clearly defined regulatory status offers significant benefits in terms of legal certainty and potential federal preemption of multiple state laws.[88] Federal preemption, in particular, explains the popularity of the so-called "rent-a-charter" practice among marketplace lenders, pursuant to which their bank-partners accept their clients' deposits and fund their loans before selling them to the

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83. 12 U.S.C. § 24 (2012). For an in-depth analysis of the concept of the "business of banking" and its interpretation by the OCC, see Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the "Business of Banking,"* 63 U. MIAMI L. REV. 1041 (2009).

84. *See* 12 U.S.C. §§ 21, 24, 22, 26, 27, 1814 (2012).

85. *See* 15 U.S.C. § 78o(a)-(b) (2012).

86. *See* CONF. OF STATE BANK SUPERVISORS & MONEY TRANSMITTER REGULATORS ASS'N, THE STATE OF STATE MONEY SERVICES BUSINESSES REGULATION AND SUPERVISION (2016), https://www.csbs.org/sites/default/files/2017-11/State%20of%20State%20MSB%20Regulation%20and%20Supervision%202.pdf [https://perma.cc/42AG-QAAV]; Marco Santori, *What Is Money Transmission and Why Does It Matter?*, COINCENTER.COM (Apr. 7, 2015), https://coincenter.org/entry/what-is-money-transmission-and-why-does-it-matter [https://perma.cc/WC5P-3BKK].

87. *See generally supra* Part I.

88. For an in-depth analysis of the role of federal preemption in the banking sector, see Arthur E. Wilmarth, Jr., *The OCC's Preemption Rules Exceed the Agency's Authority and Present A Serious Threat to the Dual Banking System and Consumer Protection*, 23 ANN. REV. BANKING & FIN. L. 225 (2004).

marketplace lending platform operator.[89] Similar arrangements allow various fintech payments firms to avoid having to obtain "money transmitter" licenses from every U.S. state and bear the costs of complying with each state's registration, recordkeeping, anti-money laundering, and other requirements.[90]

Recognizing the potential appeal of federal preemption to fintech firms, in late 2016 the OCC proposed a framework for granting a special purpose national bank charter.[91] In 2018, the OCC began accepting applications for its special purpose fintech charter.[92] The OCC stated that it would process applications in accordance with its existing chartering standards, but emphasized that it would not require applicants to accept deposits and, therefore, acquire federal deposit insurance.[93] Fintech entities chartered by the OCC would be exempt from state money-transmitter laws but would be subject to bank-like prudential requirements, albeit in a modified form commensurate with their individual risk profiles.[94] As the OCC explained,

> A fintech company that receives a national bank charter will be subject to the same high standards of safety and soundness and fairness that all federally chartered banks

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89. *See Fintech: Examining Digitization, Data, and Technology*: Hearing before the S. Comm. On Banking, Housing and Urban Affairs, 115th Cong. 14-15 (2018) (statement of Saule T. Omarova, Professor of Law, Cornell Univ.).

90. *See* Allen, *supra* note 58, at 589-90.

91. *See* OFFICE OF THE COMPTROLLER OF THE CURRENCY, SUPPORTING RESPONSIBLE INNOVATION IN THE FEDERAL BANKING SYSTEM: AN OCC PERSPECTIVE, (2016), https://www.occ.gov/publications/publications-by-type/other-publications-reports/pub-responsible-innovation-banking-system-occ-perspective.pdf [https://perma.cc/TSG7-H8ZC]. For a detailed discussion of the OCC's fintech chartering efforts, see David Zaring, *Modernizing the Bank Charter*, 61 WM. & MARY L. REV. (forthcoming 2019).

92. *See* OFFICE OF THE COMPTROLLER OF THE CURRENCY, COMPTROLLER'S LICENSING MANUAL SUPPLEMENT: CONSIDERING CHARTER APPLICATIONS FROM FINANCIAL TECHNOLOGY COMPANIES (2018), https://www.occ.gov/publications/publications-by-type/licensing-manuals/file-pub-lm-considering-charter-applications-fintech.pdf [https://perma.cc/7DBL-PHNN]; *OCC Begins Accepting National Bank Charter Applications from Financial Technology Companies*, OFFICE OF THE COMPTROLLER OF THE CURRENCY (July 31, 2018), https://www.occ.gov/news-issuances/news-releases/2018/nr-occ-2018-74.html [https://perma.cc/VVW7-B2VL].

93. *See* OFFICE OF THE COMPTROLLER OF THE CURRENCY, POLICY STATEMENT ON FINANCIAL TECHNOLOGY COMPANIES' ELIGIBILITY TO APPLY FOR NATIONAL BANK CHARTERS 3 (2018), https://www.occ.treas.gov/publications/publications-by-type/other-publications-reports/pub-other-occ-policy-statement-fintech.pdf [https://perma.cc/7SNU-U84B].

94. *Id.*

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> must meet. As it does for all banks under its supervision, the OCC would tailor these standards based on the bank's size, complexity, and risk profile, consistent with applicable law. In addition, a fintech company with a national bank charter will be supervised like similarly situated national banks, including with respect to capital, liquidity, and risk management.[95]

As non-depository institutions, however, OCC-chartered fintech firms would not be deemed "banks" for purposes of the Bank Holding Company Act of 1956 (BHC Act).[96] The BHC Act imposes significant limitations on the ability of companies controlling or affiliated with federally insured banks to conduct non-banking activities.[97] By imposing these restrictions, the statute implements the long-standing U.S. principle of separating banking from commerce.[98] The ability to avoid onerous restrictions on non-financial activities of chartered fintech firms' parent-companies is of particular significance to "Big Tech" firms running large-scale commercial empires.[99]

Despite the promise of federal preemption and regulatory certainty, to date, the practical utility of the OCC charter remains unclear. As of mid-2019, no firm has received a special-purpose national bank charter. Google and PayPal reportedly approached the OCC but ultimately abandoned the idea.[100] To a great extent, this is a product of the perceived harshness of the

95. *Id.*

96. 12 U.S.C. §§ 1841-1852 (2018). For an analysis of the evolution of the BHC Act and its definition of "bank," see Saule T. Omarova & Margaret E. Tahyar, *That Which We Call A Bank: Revisiting the History of Bank Holding Company Regulations in the United States,* 31 REV. BANKING & FIN. L. 113 (2012).

97. 12 U.S.C. §§ 1841-1852.

98. For more on the principle of separation of banking from commerce, see Saule T. Omarova, *The Merchants of Wall Street: Banking, Commerce, and Commodities*, 98 MINN. L. REV. 265 (2013).

99. *See* Lalita Clozel, *Why Are Amazon, PayPal Meeting with Bank Regulators?* AM. BANKER (Sept. 29, 2017, 12:00 PM), https://www.americanbanker.com/news/why-are-amazon-paypal-meeting-with-bank-regulators [https://perma.cc/6X2D-D4US].

100. *See* Rachel Witkowski, *Google and PayPal Explored OCC's Fintech Charter, Then Walked Away*, AM. BANKER (June 26, 2019, 9:50 PM), https://www.americanbanker.com/news/google-and-paypal-explored-occs-fintech-charter-then-walked-away [https://perma.cc/M9V3-4YKD].

regulatory and supervisory requirements applicable to chartered entities.[101] In addition, potential applicants may be discouraged by the lack of legal certainty regarding the OCC's authority to issue this type of a special-purpose charter, which is currently the subject of a court challenge by state banking regulators.[102]

From the states' perspective, a federal fintech charter presents a competitive threat, especially since several states already offer specialized licenses for cryptocurrency exchanges and other fintech firms offering cryptocurrency services.[103] Thus, the New York Department of Financial Services (NYDFS) has been offering its BitLicense since 2015.[104] As of mid-2019, companies like Ripple, Coinbase, and Square hold New York's BitLicense.[105] The BitLicense regime focuses mainly on anti-money laundering, cybersecurity, and customer protection safeguards. Any firm that operates a virtual currency exchange, issues, transmits, buys and sells,

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101. *See, e.g., Beyond FinTech: The OCC's Special Purpose National Bank Charter,* DAVIS POLK (Dec. 9, 2016) https://www.davispolk.cco/files/2016-12-9_occs_special_purpose_national_bank_charter.pdf [https://perma.cc/Z9LD-ZTT8] ("For many business models or early stage companies, the regulatory and supervisory burdens of the special purpose charter may outweigh its benefits.").

102. For a recent complaint filed by the Conference of State Banking Supervisors, see Complaint, Conference of State Bank Supervisors v. Office of the Comptroller of the Currency, No. 1:18-cv-02449 (D.D.C. Oct. 25, 2018). *See also Statement by Acting Financial Services Superintendent Linda A. Lacewell Regarding the Court's Decision to Allow DFS's Lawsuit Against the OCC to Move Forward*, N.Y. DEP'T FIN. SERVS. (May 2, 2019), https://www.dfs.ny.gov/reports_and_publications/statements_comments/2019/st1905021[https://perma.cc/WS66-DVRC]. *See generally* John W. Ryan, *CSBS Responds to Treasury, OCC Fintech Announcements,* CONF. OF ST. BANKING SUPERVISORS *(*July 31, 2018), https://www.csbs.org/csbs-responds-treasury-occ-fintech-announcements [https://perma.cc/9UA8-EFAF]. In October 2019, the U.S. District Court for the Southern District of New York ruled that the OCC had no legal authority to issue its proposed fintech charter, a decision the agency is planning to appeal. *See* Lacewell v. Office of the Comptroller of the Currency, No. 18-civ-8377 (S.D.N.Y. Oct. 21, 2019); Kate Rooney, *Fintech's Fast Pass to Traditional Banking Is Now Cut Off,* CNBC.COM (Oct. 24, 2019), https://www.cnbc.com/2019/10/24/fintechs-fast-pass-to-traditional-banking-is-now-cut-off.html [https://perma.cc/8EVS-L75B].

103. For an overview of state regulation of crypto-assets in the United States, see Matthew E. Kohen & Justin S. Wales, *State Regulations on Virtual Currency and Blockchain Technologies,* CARLTON FIELDS (Aug. 29, 2019), https://www.carltonfields.com/insights/publications/2018/state-regulations-on-virtual-currency-and-blockchain-technologies [https://perma.cc/KVZ5-DN9R].

104. *Id.*

105. Jessica Klein, *New York Just Granted its 18th BitLicense*, BREAKERMAG (Mar. 28, 2019), https://breakermag.com/new-york-grants-its-13th-bitlicense-since-last-may/ [https://perma.cc/KQ34-NVTZ].

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stores, or otherwise provides services related to any virtual currency is required to obtain BitLicense.[106]

While New York's BitLicense regime has been criticized for its ostensibly harsh requirements, Wyoming has emerged as "one of the most crypto-friendly jurisdictions in the United States."[107] By mid-2019, Wyoming has enacted thirteen laws making it much easier for cryptocurrency service providers to conduct their business.[108] For example, in March 2018, Wyoming passed a law exempting so-called "utility tokens" from the state's securities laws where, among other things, the token is being sold for consumptive, as opposed to financial investment, purposes.[109] In addition, Wyoming legislators amended the state's money transmitter laws to provide specific exemptions for virtual currency, exempted virtual currencies from state property taxes, permitted corporations to keep records on blockchain, authorized security interests in digital assets, established standards and procedures for custodial services in crypto-assets, and so forth.[110]

Despite these and other instances of state-level regulatory experimentation, it is important to keep in mind that state licenses and charters have an inherently limited jurisdictional reach. Since individual states can only capture activities affecting their own residents, any particular state regulatory scheme offers limited benefits to fintech firms seeking national, or even global, presence.[111] Furthermore, these jurisdictional restrictions make it more difficult even for the most enlightened and agile

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106. *See BitLicense Frequently Asked Questions*, N.Y. DEP'T FIN. SERVS., https://www.dfs.ny.gov/apps_and_licensing/virtual_currency_businesses/bitlicense_faqs [https://perma.cc/NAZ9-UKTM] (last visited Oct. 20, 2019).

107. Kohen & Wales, *supra* note 103.

108. *See* Gregory Barber, *The Newest Haven for Cryptocurrency Companies? Wyoming*, WIRED (June 13, 2019, 7:00 AM), https://www.wired.com/story/newest-haven-cryptocurrency-companies-wyoming/ [https://perma.cc/HKF5-3EPG]; Caitlin Long, *What Do Wyoming's 13 New Blockchain Laws Mean?*, FORBES (Mar. 4, 2019, 7:29 AM), https://www.forbes.com/sites/caitlinlong/2019/03/04/what-do-wyomings-new-blockchain-laws-mean/#13543fc75fde [https://perma.cc/8FWL-52S2].

109. Kohen & Wales, *supra* note 103.

110. *Id.*

111. To overcome this limitation, a growing consortium of states has formed a multistate platform for money-services businesses, which can operate across the participating states under a license issued by any single state in the consortium. As of mid-2019, there were twenty-one states in the consortium. *See* Rachel Witkowski, *Fintechs May Finally Win Charter Chase in 2019*, AM. BANKER (Jan. 9, 2019), https://www.americanbanker.com/news/fintechs-may-finally-win-charter-chase-in-2019 [https://perma.cc/85GQ-7T2D].

state regulators to identify and correct broader systemic dysfunctions in the fintech sector. Tech-driven financial markets' unprecedented ability to transcend and defy territorial boundaries heightens the importance of expanding the regulators' field of vision well beyond the confines of individual states' jurisdiction.

Of course, it is still too early for definitive assessments of the practical impact of new fintech charters and licenses. A few general observations, however, may be in order. In principle, chartering is a strategy of accommodating and absorbing new entities and activities into the existing structure of financial sector oversight. By definition, chartering is an entity-by-entity approach that extends the existing regulators' authority to fintech firms—and thereby legitimates new fintech-driven business models under the existing regulatory criteria.

The emphasis on *existing* regulatory criteria, however, is critical here. The rigidly compartmentalized U.S. regulatory structure has little internal flexibility with respect to core substantive requirements built into new charter types. Thus, a "special purpose" bank charter is bound to contain certain essential elements of a traditional bank charter, much like a "special" state-issued cryptocurrency license is often framed as an enhanced form of a money-transmitter license.[112] On the one hand, enhancing or modifying various long-standing regulatory forms is a well-tested method of incremental change. On the other hand, preserving regulatory continuity is not always the most effective response to changing market conditions. If the principles underlying the original charter requirements do not directly reflect the new systemic concerns raised by fintech firms' activities, issuing "special" fintech charters is not likely to generate significant public benefits.

The fintech industry's criticism of the OCC's charter conditions as excessively onerous illustrates this last point.[113] It also suggests that, as a practical matter, a "successful" fintech chartering strategy—or a strategy that would attract a large number of applicants—may require significant loosening of the applicable regulatory and supervisory conditions. Given

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112. It is worth noting, however, that Wyoming's ambitious and more comprehensive legislative effort may be an exception to this more narrowly targeted approach. *See supra* notes 108-110 and accompanying text.

113. *See supra* note 101 and accompanying text.

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potentially important systemic implications of adopting more lax chartering standards, however, this may lead to socially undesirable outcomes.

IV. THE "ACCOMMODATION" APPROACH: REGTECH AND OTHER METHODS

The third category of emerging approaches to fintech regulation encompasses a wide range of regulatory efforts to accommodate and adjust to tech-driven market developments. RegTech, in particular, is quickly becoming a fashionable term of art in the fintech discourse.[114] This term denotes a trend toward "the automation and streamlining of regulatory processes," including data collection and compliance monitoring.[115] Perhaps the most visible example of RegTech involves a large-scale replacement of the current regulatory data collection and reporting systems with fully automated and digitized technologies, including AI and cloud-based data management.[116] To the extent that manual data collection and processing tends to be both time-consuming and costly, this technological "leveraging" is expected to generate significant savings both for financial regulators and for regulated firms.[117] In addition to lowering the economic burden associated with regulatory reporting, RegTech promises to improve the quality of regulatory data by, among other things, reducing inaccuracies and duplications in data collection process. These expected efficiencies acquire particular significance in light of the substantial increase in the scope and granularity of mandatory disclosure and reporting requirements since the 2008 crisis.[118]

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114. For a small sample of the growing literature of RegTech, see Douglas W. Arner, Jànos Barberis & Ross P. Buckley, *FinTech, RegTech, and Reconceptualization of Financial Regulation*, 37 NW. J. INT'L L. & BUS. 371, 376 (2017); Lawrence G. Baxter, *Adaptive Financial Regulation and RegTech: A Concept Article on Realistic Protection for Victims of Bank Failures*, 66 DUKE L. J. 567 (2016); Tom Butler, *Towards a Standards-Based Technology Architecture for RegTech*, 45 J. FIN. TRANSFORMATION 49 (2017); Luca Enriques, *Financial Supervisors and RegTech: Four Roles and Four Challenges*, REVUE TRIMESTRIELLE DE DROIT FINANCIER 53 (2017).

115. Arner, *et al.*, *supra* note 114, at 376. It is worth noting that, as used in this article, the term "RegTech" refers to the government's use of new technologies for regulatory and supervisory purposes, and not to the advances in private firms' use of technology for purposes of regulatory compliance.

116. *See* Joel Clark, *Capitalising on Regtech*, RISK.NET (July 30, 2018), https://www.risk.net/regulation/5819321/capitalising-on-regtech [https://perma.cc/W3P2-GAWA].

117. *Id.*

118. *Id.*; Arner et al., *supra* note 114, at 384.

Another important feature of RegTech is that it potentially enables financial regulators to synchronize their data collection and supervisory monitoring with individual firms' internal data management. This can be done, for example, by digitizing and making regulations machine-readable and by using software interoperable with firms' internal compliance software.[119] Interestingly, this idea brings into sharp relief the broader potential significance of RegTech as a paradigmatic shift toward a new regime of "real-time and proportionate" financial regulation and supervision.[120] In effect, it may be said that the emerging RegTech discourse is quietly recasting the broader concept of "smart" regulation in narrowly techno-centric terms.[121]

In this sense, RegTech offers more than simply a new set of tools for increasing regulatory *capacity*—it potentially offers an alternative regulatory *philosophy*. It is, therefore, critical to exercise caution in assessing the full costs and benefits of RegTech. To date, typical concerns in connection with the spread of RegTech have focused primarily on the heightened vulnerability of agencies' information processing systems to cyberattacks, the government's usual lack of resources and technical expertise, and similar issues.[122] From a systemic perspective, however, the risks posed by a wholesale shift to RegTech go far beyond these and similar operational or personnel-related issues. On the one hand, digitizing and automating a critical mass of regulatory and supervisory functions can make them much faster and cheaper to perform. On the other hand, these same choices may irreversibly undermine regulators' overall ability to exercise meaningful oversight of the financial system.

For example, the existing system of bank supervision operates through an informed and context-specific assessment by bank examiners of individual entities' compliance not only with specific laws and regulations, but also with public policy goals and norms underlying them.[123] Importantly, this process involves a continuous analysis of, and engagement with, both

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119. *See* Clark, *supra* note 117; Enriques, *supra* note 114.
120. Arner et al., *supra* note 114, at 376, 382.
121. *See supra* Part II.
122. *See* Enriques, *supra* note 114.
123. For more on the history and principles of bank supervision, see Lev Menand, *Too Big to Supervise: The Rise of Financial Conglomerates and the Decline of Discretionary Oversight in Banking,* 103 CORNELL L. REV. 1527 (2018).

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quantitative and qualitative factors.[124] Replacing this kind of holistic, accretive, and normatively informed judgment with an algorithmic "matching" of standardized micro-level data with specific machine-readable rules may have an ironic effect of drastically decreasing both the contextual "proportionality" and practical efficacy of financial regulation and supervision.[125]

More broadly, this approach is likely to solidify private market actors' control over both technology and finance. This asymmetric shift in the public-private balance in finance will have potentially crucial systemic implications, precisely because it will not diminish the sovereign public's responsibility for providing systemic stability.[126] To the contrary, accommodating fintech-driven financial market developments may very well increase the government's market-backstopping burden.

In fact, financial regulators around the world are already working on various ways to accommodate tech-driven market developments, both through existing and brand-new forms of legal and infrastructural support of fintech activities. This includes, for example, the creation of national digital identity systems that, among other things, would significantly aid fintech firms' compliance with anti-money laundering rules.[127] Another important dimension of the ongoing official efforts to accommodate fintech involves establishing uniform standards for various aspects of online transactions, clarifying ambiguities via regulatory guidance on specific matters, and eliminating anachronistic overlaps in the existing legislation. This is a particularly salient issue in the United States, with its patchwork of federal and state regulations potentially affecting fintech activities.[128]

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124. *See, e.g.,* GOV'T ACCOUNTABILITY OFFICE, BANK SUPERVISION: REGULATORS IMPROVED SUPERVISION OF MANAGEMENT ACTIVITIES BUT ADDITIONAL STEPS NEEDED (2019) (providing a detailed analysis of supervisory oversight of banks' corporate governance and internal management processes).

125. *See supra* note 42 and accompanying text.

126. *See supra* Part I.

127. *See, e.g., Digital Identity Trends – 5 Forces that are Shaping 2020,* GEMALTO (June 25, 2019), https://www.gemalto.com/govt/identity/digital-identity-services/trends [https://perma.cc/Y2T5-U3TG].

128. This "regulatory modernization" line of argument, however, can also be used to justify politically motivated massive deregulation in the financial services sector. *See* U.S. DEP'T OF THE TREASURY, *supra* note 68. For a critique of these deregulatory efforts, see *Fintech: Examining Digitization, Data, and technology: Hearing before the S. Comm. On Banking, Housing and Urban Affairs*, *supra* note 89.

Even more prominently, this diffuse strategy of regulatory accommodation includes things like facilitating industry-wide adoption of cloud technology and granting fintech firms direct access to central bank-run payment systems.[129] Thus, the Bank of England has already opened direct access to its Real-Time Gross Settlement (RTGS) payment system to non-bank payment service providers.[130] The European Union's revised Payment Services Directive, known as PSD 2, also allows nonbank firms to connect to bank payments and data systems, subject to specific licensing requirements.[131]

Granting fintech companies access to central banks' payments and clearing systems is typically justified in terms of greater competition, financial inclusion, and "keeping pace" with the changing market structure.[132] However, Facebook's recent announcement of an ambitious plan to issue its own cryptocurrency, called Libra, brought into sharp relief the broader macroeconomic and political implications of opening central banks' balance sheets to Big Tech and other emerging fintech platform operators.[133] The entry of Big Tech companies into financial services reveals the crucial link between the sheer market power these companies

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129. *See* HAL S. SCOTT, JOHN GULLIVER & HILLEL NADLER, CLOUD COMPUTING IN THE FINANCIAL SECTOR: A GLOBAL PERSPECTIVE 6 (2019), https://www.pifsinternational.org/wp-content/uploads/2019/07/Cloud-Computing-in-the-Financial-Sector_Global-Perspective-Final_July-2019.pdf [https://perma.cc/W75F-53ZX].

130. *See Bank of England Extends Direct Access to RTGS Accounts to Non-Bank Payment Service Providers*, BANK OF ENG. (July 19, 2017), https://www.bankofengland.co.uk/news/2017/july/boe-extends-direct-access-to-rtgs-accounts-to-non-bank-payment-service-providers [https://perma.cc/JC8A-TMYS]; BANK OF ENG., A BLUEPRINT FOR A NEW RTGS SERVICE FOR THE UNITED KINGDOM (2017), https://www.bankofengland.co.uk/-/media/boe/files/payments/a-blueprint-for-a-new-rtgs-service-for-the-uk.pdf?la=en&hash=56424C6BC6D9E056F05476A96B482D4779377E45 [https://perma.cc/M9AA-LZ53].

131. *See* 2015 O.J. (L 2015/2366) 337. This particular form of regulatory accommodation works in tandem with the chartering strategy.

132. *Id*.

133. *See* LIBRA, LIBRA WHITE PAPER, https://libra.org/en-US/white-paper/ [https://perma.cc/C8DW-CJA9]. For an analysis of potential macro-systemic implications of the Libra proposal, see Saule Omarova and Graham Steele, *There's a Lot We Still Don't Know About Libra*, N.Y. TIMES (Nov. 4, 2019), https://www.nytimes.com/2019/11/04/opinion/facebook-libra-cryptocurrency.html?searchResultPosition=1 [https://perma.cc/9AP8-N3AM].

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yield in purely commercial markets and their potential to emerge as a new breed of "too big to fail" financial institution.[134]

Facebook's plan to launch Libra as the world's leading currency, built on top of the world's most ubiquitous social media platform, illustrates these structural dynamics.[135] It also shows how fintech is tying financial markets to non-financial sectors of the economy in an increasingly visible and politically salient manner.[136] Perhaps even more importantly, the Facebook controversy puts a concrete, intuitively understandable spin on issues long relegated to technocratic decision-making. In this broader sense, it may help to create a real policy opening for more comprehensive and normatively grounded structural responses to the fintech challenge than the ones we are seeing today.[137]

CONCLUSION

This symposium article examines the emerging approaches to regulating fintech as a distinct market phenomenon. Using the United States as its main case study, the article argues that the principal forms of regulatory response to fintech to date continue to operate in the traditionally technocratic vein. Despite the wide variety of specific policy choices and legislative developments around the world, the overall process appears to rely primarily on the existing regulatory tools and techniques as the means of accommodating and absorbing new entities and activities into the established regulatory schemes.

Regulatory sandboxes, special fintech charters, and RegTech exemplify this general pattern. A focused analysis of these strategies reveals both the inherent complexity of fintech as an object of financial regulation and the utmost importance of the regulators' capacity—and willingness—to rise to its challenges. As the article shows, current regulatory approaches seek

134. *See Fintech: Examining Digitization, Data, and Technology: Hearing Before the S. Comm. On Banking, Housing, and Urban Affairs*, *supra* note 89, at 14.

135. *See* Omarova & Steele, *supra* note 133.

136. *Id.*; Graham Steele, *Facebook's Libra Cryptocurrency is Part of a Disturbing Financial Trend,* WASH. POST (Aug. 12, 2019, 7:23 AM), https://www.washingtonpost.com/outlook/2019/08/12/facebooks-libra-cryptocurrency-is-part-disturbing-financial-trend/ [https://perma.cc/U6DN-GENX].

137. For a detailed discussion of potential approaches to developing such a comprehensive, systemically-oriented strategy of fintech regulation, see Omarova, *supra* note 8.

primarily to facilitate private innovation, among other things, by providing infrastructural support for tech-driven market developments and by making financial regulation more tech-friendly and technology-specific. This normative framing both reflects and reinforces financial regulators' traditional preference for technical solutions narrowly targeting micro-level transactional problems—and their antipathy toward macro-level structural measures involving more explicit political trade-offs. This regulatory mindset, however, is inherently limited in its ability to recognize and address the deeper systemic implications of fintech as a potential disruption of the fundamental public-private balance of power in modern finance.[138]

Of course, at this relatively early stage in the process, it is difficult to render a definitive assessment with respect to the practical efficacy of any specific regulatory development in the fintech space. Nevertheless, the conceptual exercise of identifying and unpacking the core features and drivers of the regulatory responses to fintech disruption, as they appear today, establishes a helpful baseline for further discussion and policy analysis. Examining these response strategies as interconnected parts of an emerging regulatory pattern enriches our collective understanding of their relative strengths and shortcomings. In a broader sense, moreover, it underscores the importance of developing a normatively unified and coherent strategy of fintech regulation, which would seek—explicitly and systematically—to support and harness the power of technology in the public's interest.

We are not there yet.

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138. *See supra* notes19-28 and accompanying text. For an in-depth analysis of the disconnect between the predominantly technocratic philosophy of today's financial regulation and the fundamental regulatory challenges posed by fintech, see Omarova, *supra* note 8.

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