

Fintech: A Field Day of Arbitrage Gone Awry

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FINTECH: A FIELD DAY OF ARBITRAGE GONE AWRY

GRACE FRASER*

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INTRODUCTION

From the introduction of writing on papyrus to the Gutenberg printing press, or from the invention of the telescope to the LHC particle collider, technology has always been the disruptive force for change in society.¹ However, the question remains whether that change is productive or destructive (or both). Smartphones have become an annex to our very existence, holding our finances, social contacts, and sometimes our deepest inner monologue. Technology changes the course of our lives and how we self-regulate before we even know it, and this remains true of its role in the global financial system.

Many remember the Stock Market Crash of 1987 as "Black Monday," the day "when the Dow Jones Industrial Average dropped 22.6 percent in a single trading session."² However, some perceptively recognize this day as one of the first examples of technology penetrating our financial system to ultimately change the course of how global markets should be regulated. Rather than managing human error of the past, this financial crisis forced us to investigate the role of financial and technological innovation in increased market volatility. Rather than managing mere human error, automated program trading and high-frequency trading (HFT) added new variables into the playing field.³ Regulators were unprepared for the rapid trading volume and subsequent devastation because they dealt with the unprecedented. Something about the technology itself changed the operation of the financial service, and this phenomenon is consistent with our modern fintech startup industry boom.

What happened in 1987 was a moment in economic history that illustrates how technology products in financial markets create opportunities for "arbitrage" inside traditional regulatory platforms.⁴ Since then, technology has become inseparable from our daily activities — and our finances. People are sucked into the appeal of financial technology because it appears to be a user-friendly solution to issues in the systems we already know.⁵

The purpose of this paper is to elucidate how upstart financial technology captured this consumer appeal, arbitrated the legacy regulatory regime, and initiated a legislative quagmire.

¹ *Definition of Technology*, COLLINS ENG. DICTIONARY, <https://www.collinsdictionary.com/dictionary/english/technology> (last visited Jan. 13, 2022) (providing the definition of technology that will be used in this paper and defining technology as "a method, process, etc. for handling a specific technical problem" or "the system by which a society provides its members with those things needed or desired.").

² See Donald Bernhardt & Marshall Eckblad, *Stock Market Crash of 1987*, FED. RESERVE HIST. (Nov. 22, 2013), <https://www.federalreservehistory.org/essays/stock-market-crash-of-1987>.

³ Michael J. Boyle, *Stock Market Crash of 1987*, INVESTOPEDIA (Jan. 22, 2021), <https://www.investopedia.com/terms/s/stock-market-crash-1987.asp> (contextualizing how rapid program trading can create volatility in the market).

⁴ See, e.g., Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 J. CORP. L. 211, 227 (1997) (defining regulatory arbitrage as "financial transactions designed specifically to reduce costs or capture profit opportunities created by differential regulations or laws.").

⁵ See Lars Hornuf et al., *How Do Banks Interact with Fintech Startups?*, CESIFO WORKING PAPERS 3 (Jan. 2020), https://www.cesifo.org/DocDL/cesifo1_wp7170_0.pdf (stating "digital technology in the financial industry has in many cases created more customer-oriented and user-friendly digital applications, leading to increased digital servitization of financial products.").

Understanding this phenomenon and recognizing regulators' challenged efforts are essential to managing systematic risk in the U.S. (and global) financial system, and the safety of technology-using consumers.⁶

A. IMPORTANCE OF THE SEMANTIC BOUNDARIES OF FINTECH

Like the business and financial industry, technology comes with its own esoteric vocabulary, and this paper will focus on a specific class known as financial technology ("fintech"). It is easy to feel overwhelmed with semantics when discussing "Bigtech," "Bigdata," and the massive abstract concept of "Fintech." Still, this paper deals with a narrow subdivision of these umbrella terms.

First and foremost, there is no singular, objective definition of "financial technology." People even disagree on how to pen the term (whether it should be written as "Fintech," "FinTech," "fintech," etc.). But we do know that the key ingredients of Fintech are computing, interface, and data (in that many of these products can be used on a mobile phone and are "consumer-friendly").⁷ Though these three terms are core to understanding the technology involved, their true definitions are often overlooked and important to understand before digesting outstanding definitions of financial technologies.

- *Computing* describes the general “process of using computer technology to complete a given goal-oriented task.”⁸ What computing entails in detail depends on the type of technology involved. Still, computing can be simply understood as the activities involved in making the mobile apps perform the actions of the buttons you press.⁹
- *Interface*, in its broadest use, describes “a boundary across which two independent systems meet, act, and communicate with each other.”¹⁰ With respect to technology and computers, this is most akin to *user interface*, which refers to the meeting place of computing between the user and technology's operating system. Our modern technology

⁶ See William Magnuson, *Regulating Fintech*, 71 VAND. L. REV. 1167, 1226 (2018) (writing “Fintech firms are innovating the way that financial services are provided . . . Fintech promises to provide great benefits to society, as it lowers costs and broadens access. But it also presents new and different concerns than those presented by conventional financial institutions.”).

⁷ René M. Stulz, *Bigtech, and the Future of Banks*, NBER WORKING PAPERS 7 (Sept. 2019), https://www.nber.org/system/files/working_papers/w26312/w26312.pdf; 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, 90 (2016) (reiterating that Fintech focuses on the “consumer experience”); see also Hilary J. Allen, *Regulatory Sandboxes*, 87 GEO. WASH. L. REV. 579, 585–86 (2019) (stating “the term ‘fintech’ is popularly used to describe the slew of internet-and-smartphone-enabled financial innovations that have risen to prominence since the Financial Crisis . . . [T]here is no definitive categorization of the products and services that qualify as ‘fintech.’”).

⁸ *Computing*, TECHOPEDIA, <https://www.techopedia.com/definition/6597/computing> (last visited Jan. 13, 2022).

⁹ *Id.* (stating “cloud computing, social computing, ubiquitous computing, parallel computing and grid computing all fall under the umbrella of the general meaning of computing while still having a specific purpose and definition separate from each other”).

¹⁰ Vangie Beal, *Interface*, WEBOPEDIA, <https://www.webopedia.com/definitions/interface/> (June 7, 2021).

also involves *software interface*, the languages and codes that the applications use to communicate with each other and with the hardware, and *hardware interface*, the wires, plugs, and sockets that hardware devices use to communicate with each other.

- *Data* is a term that is often used as broadly as it is used frequently. In its most genuine form, data simply “refers to distinct pieces of digital information” (separated from mere “bits”).¹¹ In recent discussions, the use of the word data is often conflated with the meaning of *data technologies* that manage large amounts of user data and create organizational and behavioral algorithms surrounding the data to sell to third-party companies for profit.¹²

While breaking down the formalities of technology vocabulary may seem tangential, understanding these basics of technology mechanics and user relationships is necessary before diving into popularized attempts at defining fintech. The definitions below vary in length, complexity, and detail, but all trace back to the three core players in what constitutes fintech: computing, interface, and data.

The Financial Stability Board (FSB), an international entity that monitors and makes recommendations about the global financial system, defines Fintech “as technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services.”¹³ Some also “use the term ‘fintech’ to refer to the new breed of companies that specialize in providing financial services primarily through technologically-enabled mobile and online platforms.”¹⁴ Others refer to fintech more generally as “the novel processes and products that become available for financial services thanks to technological advancements.”¹⁵ As demonstrated by this sampling of these definitions, many use marginally different (but similarly complicated) words to describe Fintech, but all are underpinned with the basics of technology-user relationships within the context of financial services.

In the spirit of simplicity, this paper's definition of fintech is as follows:

¹¹ *Data*, TECHOPEDIA, <https://www.techopedia.com/definition/807/data> (last visited Jan. 13, 2022).

¹² *Data Compression*, TECHOPEDIA, <https://www.techopedia.com/definition/884/data-compression> (May 28, 2019) (describing “compression” as “the process of modifying, encoding, or converting the bits structure of data in such a way that it consumes less space on a disk” or desired infrastructure. However, more simply, compression can also be understood as the basis for “condensation of thought and language”); Johnathan Sterne, *Signal Traffic* in CRITICAL STUDIES OF MEDIA INFRASTRUCTURES 32 (Lisa Parks & Nicole Starosileski, eds., 2015).

¹³ *FSB Report Assesses FinTech Developments and Potential Financial Stability Implications*, FIN. STABILITY BD., (Feb. 14, 2019), <https://www.fsb.org/2019/02/fsb-report-assesses-fintech-developments-and-potential-financial-stability-implications/>.

¹⁴ Magnuson, *supra* note 6, at 1174.

¹⁵ *Fintech and Banks: Friends or Foes*, EUROPEAN ECON., (Dec. 23, 2017), <https://european-economy.eu/2017-2/fintech-and-banks-friends-or-foes/>.

*Financial technology is the practical application of innovation in software and hardware in the financial industry.*¹⁶

To reiterate, the common roots of fintech (and general disruptive technologies) are in the computing, interface, and user-data relationships.¹⁷ Among other beneficial factors to be discussed later in this paper, these three ingredients are constants in the formula fintech companies use to sway consumers away from utilizing legacy financial institutions and propel their tech to arbitrage existing financial regulations.

B. HISTORY OF TECHNOLOGY IN FINANCIAL SERVICES

While Fintech is “well beyond the stage of ‘hype’” and is a “significant player” in the industry, taking a moment to consider the history of tech in financial services is worthwhile.¹⁸ “Finance and technology,” after all, “have always had a long and symbiotic relationship.”¹⁹ We may think fintech emerged in the 1960s when banks started to use computers and introduced ATMs, but technology entered financial services well before the digital age.²⁰ Some argue the first wave of technological disruption in financial services began with the completion of the first transatlantic telegraph cable in 1866,²¹ while others identify the invention of the pantelegraph, the machine used to verify signatures, in 1865 as one of the earliest examples of technology in the financial industry.²² As suggested earlier, tech was also surely involved in the form of wire transfers and high-speed trading during the 1987 crisis. However, since this paper encourages a more basic and deconstructed understanding of technology, we will trace the history of financial technology back to the introduction of ancient coins as currency.²³

¹⁶ See *Technology*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/technology> (last visited Jan. 13, 2022).

¹⁷ See George Walker, *Financial Technology Law – A New Beginning and a New Future*, 50 INT’L LAW. 137, 140 (2017) (describing Fintech “in terms of the electrification and digitalization of banking and financial services, bank accounts and ledgers, and their use in innovative and unconventional ways.”).

¹⁸ In Lee & Yong Jae Shin, *Fintech: Ecosystem, Business Models, Investment Decisions, and Challenges*, 61 BUS. HORIZONS 35, 36 (2017); see, e.g., Rhodri Preece, *Understanding the Fintech Hype*, 27 CFA INST. MAG. 52, 52 (Sept. 2016), <https://www.cfainstitute.org/-/media/documents/article/cfa-magazine/2016/cfm-v27-n3-17.ashx> (discussing that in 2016, Fintech was “one of the most talked about buzzwords in finance”).

¹⁹ Pablo Hernandez de Cos, Chairman, Basel Comm. on Banking Supervision & Governor of the Bank of Spain, *Financial Technology: the 150-year revolution*, Keynote Speech at the 22nd Euro Finance Week (Nov. 19, 2019) (transcript available at <https://www.bis.org/speeches/sp191119.pdf>).

²⁰ See Stulz, *supra* note 7, at 1; Eilene Zimmerman, *The Evolution of Fintech*, N.Y. TIMES (Apr. 6, 2016), <https://www.nytimes.com/2016/04/07/business/dealbook/the-evolution-of-fintech.html> (citing technology’s influence on finance as far back as 1866).

²¹ Hernandez de Cos, *supra* note 19.

²² Zimmerman, *supra* note 20.

²³ See Chapurukha Kusimba, *When – and why – did people first start using money?*, THE CONVERSATION (June 19, 2017), <https://theconversation.com/when-and-why-did-people-first-start-using-money-78887>.

However, the internet revolution in the early 1990s accelerated the popularity of technology in finance as new developments lowered the costs for financial transactions. Technological advances driven by the internet changed the face of the financial services industry and led to the development of electronic finance (e-finance).²⁴ E-finance has since expanded with “[t]he growth of the smartphone user base in the mid-2000s facilitated the growth of mobile finance, such as mobile payment and mobile banking, which is an extension of e-finance.”²⁵ Utilizing these leaps, financial institutions have allowed their customers to access bank account information and to make transactions (such as paying bills and remitting money); with the growth of financial technology, these transactions were even more readily available via their mobile device.²⁶ Technology may have always been a part of finance and societal growth, but the fintech that our present society is familiar with is developing and converting financial services at an unprecedented rate.²⁷

The fintech at issue in this paper ultimately correlates with the decline in legacy traditional banking and the increasingly regulated financial environment post-2008 when traditional financial institutions were subjected to more rigorous regulation, capital requirements, and reporting requirements from regulators.²⁸ While “[t]he financial crisis was creating economic pain across the country[,] . . . new tech companies were launching and expanding at a brisk rate: Apple released the iPhone in 2007; Airbnb popularized home-sharing in 2008, and the following year Bitcoin was created.”²⁹ As banks had their hands tied regaining the trust of the societal consumer and adjusting to a slew of new regulations, a new powerful “network of tech startups and venture capital-backed companies began to disrupt the way the financial services could be provided.”³⁰ As of late, financial technology has established itself both prominently and successfully into our daily societal activities for three reasons: (1) the significantly lower overhead costs of upstart market business, (2) a ripe regulatory climate for arbitrage, and (3) continuing uncertainty among legislators over how to respond to developing disruptive technology.³¹

1. OVERHEAD COSTS

In addition to the main trifecta ingredients of categorical fintech mentioned earlier (computing, interface, and data), most fintech companies also find social and business commonalities in benefitting from low overhead costs. “Overhead” is a commonly used term to

²⁴ Lee & Shin, *supra* note 18, at 36.

²⁵ *Id.*

²⁶ *Id.* at 35.

²⁷ Stulz, *supra* note 7, at 12 (“The digital and big data revolutions make possible many new products and practices across the whole economy.”).

²⁸ See Siqi Wang, *Consumers Beware: How Are Your Favorite “Free” Investment Apps Regulated?*, 19 DUKE L. & TECH. REV. 43, 47 (2021); Greg Buchak et al., *Fintech, Regulatory Arbitrage, and the Rise of Shadow Banks*, 130 J. FIN. ECON. 453–83 (2018).

²⁹ Sheelah Kolhatkar, *Robinhood’s Big Gamble*, THE NEW YORKER (May 17, 2021), <https://www.newyorker.com/magazine/2021/05/17/robinhoods-big-gamble>.

³⁰ Magnuson, *supra* note 6, at 1168 (highlighting that fintech thrived while “Congress was focused on fixing Wall Street”).

³¹ Renee M. Jones, *The Unicorn Governance Trap*, 166 U. PA. L. REV. ONLINE 165, 171 (2017).

describe these upstart companies' advantage in (1) lower costs of search that enable matching in financial markets more effectively, (2) economies of scale in collecting large bunches of data, (3) cheaper and more secure transmission of information, and (4) lower costs of verification.³² As with most startups, fintechs can enter the financial market fairly easily and quickly because these companies can operate with almost no capital at all. Thus, the trend in upstart businesses is to present to investors with a flashy, low-cost business model with the promise of a fast return. Additionally, these companies' critical facilities can be rented at low costs by accessing cloud services.³³ While legacy financial institutions are tied to their expensive and aging onsite tech infrastructure, upstart fintech companies save money, get off the ground quickly, and enter the user market by shifting their business operations to third-party cloud computing services.³⁴

2. ARBITRAGE OF REGULATORY BARRIERS

U.S. regulators imposed new burdens, expectations, and capital requirements on financial institutions in the wake of the 2008 financial crisis. These regulatory barriers made it difficult for legacy institutions to venture into new innovative products at the same rate as startup companies. Though legacy banking and financial institutions can imitate some digital and interface characteristics, their current regulatory expectations require them to operate with more capital and take a more cautious approach to innovative experiments.³⁵ Once startups are in their market, they continue to benefit from an arbitrage sweet spot of acting like a financial institution without playing by the same rules as these legacy counterparts.³⁶ The concept of regulatory arbitrage its role in fintech's disruptive impact on the finance industry will be the meat of this paper in the following section.

3. PERVASIVE LEGISLATIVE UNCERTAINTY

Society's interactions with finance have presently reached a place where "[c]onsumers, rather than relying on a single financial institution for their needs, are beginning to pick and choose services they would like from a variety of fintech companies."³⁷ For example, "a consumer may manage his or her loan via SoFi while using PayPal to manage payments, Rocket Mortgage for his/ her mortgage, and Robinhood for stock management." This fundamental change in operational behavior contributes to the uncertainty and newness around fintechs has

³² Giorgio Barba Navaretti et al., *Fintech and Banking: Friends or Foes?*, 2 EUROPEAN ECON. 9, 12 (2017).

³³ Stulz, *supra* note 7, at 12.

³⁴ *Cloud Computing and its impact on Tech Companies*, FINTECH FIN. (Aug. 24, 2020), <https://www.fintechf.com/01-news/cloud-computing-and-its-impact-on-fintech-companies/>.

³⁵ Stulz, *supra* note 7, at 12.

³⁶ Jones, *supra* note 31, at 169 (noting "recent market trends and deregulatory reforms weakened or eliminated the principal mechanisms that imposed discipline on start-up company founders" and that many "unicorn" companies are not subject to the same disclosure scrutiny public companies face post- IPO).

³⁷ Lee & Shin, *supra* note 18, at 37 ("[F]or example, a consumer may manage his/her loan via SoFi, while using PayPal to manage payments, Rocket Mortgage for his/her mortgage, and Robinhood for stock management.").

initiated a newfound "paucity of studies on the social, regulatory, technological, and managerial aspects of fintech" and consequentially "makes it very challenging for financial firms to make more informed decisions regarding the investment in fintech projects."³⁸ Despite its solid presence in modern society's financial operations, what is still unknown about fintech is raising concerns regarding recent legislative efforts. Policy making is often too slow to act on fintech regulations, leaving consumers and our financial system vulnerable.

I. REGULATORY ARBITRAGE

A. WHAT IS ARBITRAGE?

Generally speaking, arbitrage describes a process of taking advantage of a systemic gap for gain.³⁹ Most commonly used in the financial context, an example of arbitrage could be trading that exploits the tiny differences in price between identical assets in two or more markets.⁴⁰ In a similar vein, the concept of regulatory arbitrage "exploits the gap between the economic substance of a transaction and its legal or regulatory treatment, taking advantage of the legal system's intrinsically limited ability to attach formal labels that track the economics of transactions with sufficient precision."⁴¹ Regulatory arbitrage often coincides with the introduction of "disruptive technologies" or "disruptive innovations" that are fundamentally less complicated, more accessible, and less expensive than existing ones, ultimately undermining and replacing their incumbents.⁴²

Because the technology sector may move faster than regulators can strategize regulation and confront new technologies, new players in the industry are ripe with opportunities to flourish.⁴³ U.S. regulators of all industries often grapple to regulate new technology appropriately because, in addition to making administrative considerations about the timing, form, durability, and enforcement methods of new regulatory policies, they face an additional challenge to stop and learn on the fly what the technology is they are tasked to regulate.

³⁸ *Id.* at 45.

³⁹ Jason Fernando, *Arbitrage*, INVESTOPEDIA (Aug. 30, 2021), <https://www.investopedia.com/terms/a/arbitrage.asp> (stating "[a]rbitrage exists as a result of market inefficiencies and it both exploits those inefficiencies and resolves them.").

⁴⁰ *Id.*

⁴¹ Victor Fleisher, *Regulatory Arbitrage*, 89 TEX. L. REV. 227, 229 (2010) (noting that arbitrage exists in other industries such as tax).

⁴² Nathan Cortez, *Regulating Disruptive Innovation*, 28 BERKELEY TECH. L.J. 175, 182–83 (2014) (citing Joseph L. Bower & Clayton M. Christensen, *Disruptive technologies: Catching the Wave*, HARV. BUS. REV. Jan.–Feb. 1995, 43, 45 (1995); Clayton M. Christensen, *THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL* (1997)).

⁴³ *Id.* at 201 ("As the FDA's posture on software reveals initial reticence to regulate can easily harden into a long-term laissez faire default.").

However, "waiting for the perfect information before taking a formal regulatory position will often result maintaining the regulatory status quo."⁴⁴

As frankly put by Professor Hilary Allen,

"When regulators do not fully understand financial products and services, it is easier for the providers of such products and services to design them in such a way as to avoid the letter (but violate the spirit) of regulations that aim to protect consumers and financial stability. Such regulatory arbitrage can be particularly successful in a system of multiple financial regulators with potentially overlapping jurisdiction, where it is not always clear which of these regulators should regulate a new product or service. These same providers of products and services take advantage of this uncertainty to structure a product to avoid the jurisdiction of the most stringent regulator."⁴⁵

Arbitrage in this paper refers to fintech's strategy of slipping through the cracks of U.S. financial regulators' slow and limited understanding of financial technologies' nuanced capabilities and unprecedented underlying technology.

B. ARBITRAGE OF "FINANCIAL TECHNOLOGY" REGULATION

To disrupt the market and establish themselves as a competitive player, tech startup companies will often test the limits of their "regulatory entrepreneurship" and seek compliance later when they have grown too big to handle.⁴⁶ With upstart companies' overhead advantage, small size, and dispersed nature, fintechs entering finance are initially less restricted by reputational constraints than their legacy financial institution counterparts.⁴⁷ At conception, these companies exploit regulatory differences in their use of "float," which is a major source of profits for many fintech firms in which "they collect money upfront and use it, generally paying

⁴⁴ Hilary J. Allen, *Regulatory Sandboxes*, 87 GEO. WASH. L. REV. 579, 603 (2019) (citing Cortez, *supra* note 42, at 202–04 (2014) (noting that maintaining the regulatory "status quo" often favors the innovative tech industry and perpetuates more unknown risk)).

⁴⁵ *Id.* at 614-15.

⁴⁶ *Id.* at 585 ("It is not surprising, then, that many fintech businesses have eschewed the 'regulatory entrepreneurship' strategy adopted by startups like Uber and AirBnB, whereby a firm starts a business of questionable legality and then engages in political pressure to change the law to accommodate that business."); Jones, *supra* note 31, at 181 ("These Unicorns seeks to disrupt established industries by challenging the regulatory system through innovation facilitated by technology. Instead of waiting for clarity on how the law impacts their business, some Unicorns have incorporated law-breaking into their business plans."); see Elizabeth Pollman & Jordan M. Barry, *Regulatory Entrepreneurship*, 90 S. CAL. L. REV. 383, 392 (2017); see also Grace Fraser, *Short-term Rental Platforms: Consumer Convenience or Headache for Local Regulators?* AM. U. LEGIS. & POL'Y BRIEF (Apr. 12, 2021), <http://www.legislationandpolicy.com/4474/short-term-rental-platforms-consumer-convenience-or-headache-for-local-regulators/> (discussing recent struggles by local governments to regulate short-term rental platforms).

⁴⁷ Magnuson, *supra* note 6, at 1199.

no interest on it.”⁴⁸ These less stringent regulatory requirements imposed on fintech startups “allow them to provide more customized, inexpensive, and easy-to-access financial services to consumers than traditional institutions.”⁴⁹

Among banking and financial institutions, fintech engagement in regulatory arbitrage involves the idea that non-banks can attain market share from banks in products that can be offered without a banking charter. The following section will provide a more detailed breakdown of the current U.S. financial regulatory regime. The key to understanding arbitrage in this context is to appreciate that financial institutions and fintech startups face different regulatory requirements based on the type of financial services they provide.⁵⁰

C. MISGUIDED REGULATORY PERCEPTIONS OF FINTECH COMPANIES

A fintech company, having swiftly entered the market thanks to its low overhead and cheap-fast business model, has room to grow without a designated regulatory identity. Considering all the jargon and non-intuitive vocabulary surrounding technology mentioned earlier, it is no surprise that many people define fintech differently than the simplified definition I posit. For future clarification, let us distinguish what is and is not a "fintech" company for the purpose of this paper through the lens of the U.S. regulatory schema currently governing the financial industry.

In general, regulation in the United States is typically perceived as a top-down, command-and-control exercise, where regulators impose rules and enforce compliance without any kind of iterative dialogue with the industry they regulate.⁵¹ Many rules coming from multiple enforcement agencies and, much like technology and finance, the administrative system demands the learning of a new industry language.

Though the U.S. financial regulatory regime is notoriously complicated, the primary regulating agencies group it into three general categories:

- (1) *Depository institution regulators* - including the Federal Reserve, Office of the Comptroller of the Currency (OCC), Federal Deposit Insurance Corporation (FDIC) and National Credit Union Administration (NCUA);
- (2) *Consumer protection agencies* - including the Consumer Finance Protection Bureau (CFPB) and the Federal Trade Commission (FTC); and
- (3) *Securities regulators* - including the Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission (CFTC), and the Financial Industry Regulatory

⁴⁸ Stulz, *supra* note 7, at 14 (citing Izabella Kaminska, *Will fintechs sink or swim when floats are regulated?*, ALPHAVILLE (Jan. 7, 2019)).

⁴⁹ Lee & Shin, *supra* note 18, at 37-38.

⁵⁰ *Id.* at 44 (“for example, most banks operate on some form of fractional-reserve banking system. There are strict and complex guidelines for what kind of lending is permissible based on the capital held by a traditional financial institution that may not apply to a lending fintech startup that does not technically lend (e.g., a P2P lending firm).”).

⁵¹ Allen, *supra* note 44, at 600.

Authority (FINRA).⁵² Although each regulator has a unique mandate, the system's multiplicity of government bodies creates gaps and overlaps among jurisdictions.⁵³

Recognizing that the U.S. financial system is highly regulated and limited in lending practices and collection of consumer information is crucial, since it opens opportunities for new financial services that are not subject to the same regulatory constraints to flourish and gain popularity. Regulatory complexities incubate a sweet spot for innovative technologies concerning robust federal pre-emption policies, disclosure requirements, and compliance costs. Since their inception, technology companies venturing into financial services and marketplace lenders have sought to operate nationally while avoiding the inefficient and costly fifty-state patchwork of statutes, regulations, and licensing requirements for lenders, money transmitters, and payment processors.⁵⁴ Even for products that require a charter, such as deposits, non-banks can offer attractive substitutes because they do not always have to meet traditional bank regulations.⁵⁵ Such discrepancy in regulatory costs for the same service is exemplary arbitrage. Regulators' misunderstanding of reality fintech is only exacerbated by the fact that "most fintech firms are not subject to the extensive disclosure obligations that large, public financial institutions are."⁵⁶ Arbitrage of these types of regulatory transparency requirements results in significantly less public information about upstart fintech companies and concerning perpetuates U.S. regulators' present position of asymmetric information.

Reforming technology legislation presents "a subject of hot debate whether fintech is sufficiently different from preceding waves of financial innovation to warrant specialized regulatory attention."⁵⁷ Though regulators such as the OCC have acted to incorporate technology in financial services into their regulatory regime through partnerships with technology service providers, regulatory sandboxes, and new offices designated for innovation

⁵² ANDREW P. SCOTT, CONG. RSCH. SERV., R46333, FINTECH: OVERVIEW OF FINANCIAL REGULATORS AND RECENT POLICY APPROACHES 2–3 (2020).

⁵³ *Id.* at 1. *See also* Marc Labonte, CONG. RSCH. SERV., R44918, WHO REGULATES WHOM? AN OVERVIEW OF THE U.S. FINANCIAL REGULATORY FRAMEWORK 8–9 (2020) (expanding on the financial regulatory framework).

⁵⁴ Richard E. Gottlieb et al., *Four-Way Stalemate: Recent Developments in Regulatory Compliance for Fintech Companies and Marketplace Lenders*, 75 BUS. LAW. 1931, 1931 (2020). *See* Stulz, *supra* note 7, at 11 (arguing "Fintech firms that do not have a bank charter can compete with banks by offering cheaper and better financial services than those offered by banks. Whereas regulation makes it difficult for FinTech firms to become successful banks, it benefits them when they compete with banks without acquiring a bank charter. . . . Fintech firms are not subject to capital requirements, so they can conduct bank activities at a lower cost. Regulation designed to protect the banking system helps FinTech firms at the expense of banks.").

⁵⁵ Stulz, *supra* note 7, at 13 ("[M]uch of FinTech activity finds easy ways of bypassing regulations that affect banks . . . The concern when it comes to FinTech competition is not with whether the banks should be incurring these costs, but with the fact that banks and FinTech firms face different regulatory costs for similar activities because they are subject to different regulations.").

⁵⁶ Magnuson, *supra* note 6, at 1203.

⁵⁷ Allen, *supra* note 44, at 606.

programs, the technology they have targeted in the past is not necessarily the "fintech" that should be of priority concern.⁵⁸

The essence of the issue is that current regulatory efforts in financial services focus on tech platforms, products, and services that meet the mold of legacy systems. But real fintech at the heart of this paper presents new and unique functions that slip through these regulatory standards and benefit from a regulatory "Wild West" for too long. Robinhood and Venmo, which the next section discusses in more detail, relished this freedom to create chaos because regulators failed to ascertain their newness into their "fintech" policies and schemas.

II. IDENTIFYING FINTECH ARBITRAGE BY EXAMPLE

It would be impracticable to discuss every fintech company presently operating the market. By the time this paper is finished, more will be created.⁵⁹ Instead, the following will be a close look at two illustrative fintech companies, Robinhood and Venmo, compared to their respective "brick and mortar" competitors, TD Ameritrade and Zelle. Because many upstart companies relished private company status and were not obligated to make public disclosures, there is more unknown than known about their business models, underlying tech, and nuanced flavors.⁶⁰ By considering and comparing fintech to traditional services, we can attempt to discern how the technology-specific characteristics of Robinhood and Venmo allowed for regulatory arbitrage through the angle of the platforms' (1) distinguishable interfaces from their respective legacy competitors and (2) uncertain place in U.S. legacy regulatory structure.

A. ROBINHOOD

Robinhood is among a wave of "fintech" firms promising easier, cheaper access to financial services and markets.⁶¹ The company solidified itself as a household name in February 2020 as something to do with "shorts" and "GameStop," but it initially launched in 2013 as a financial news platform, where users could rate stocks and predict their performance. Currently, the company is a broker that offers commission-free trading of stocks, exchange-traded funds (ETFs), crypto-currencies, and options through a mobile app and recently filed to take the company public.⁶²

⁵⁸ Scott, *supra* note 52, at 4, 6, 11; *see, e.g.*, Scott Coleman, *OCC approves national bank charter applications of fintech company*, JDSUPRA (Jan. 25, 2022), <https://www.jdsupra.com/legalnews/occ-approves-national-bank-charter-7048581/>.

⁵⁹ *See generally* Jeff Kauflin & Janet Novack, *The Most Innovative Companies of 2020*, FORBES (June 8, 2021) <https://www.forbes.com/fintech/2021/#47ac5f1a31a6>; *The Top 11 Fintech Disruptors of 2021*, *The Fin. Brand* (June 23, 2021), https://thefinancialbrand.com/116705/the-top-11-fintech-disruptors-of-2021/?utm_medium=email&utm_source=fintechweeklycom.

⁶⁰ Jones, *supra* note 31, at 184.

⁶¹ Gregory Barber, *When Your Hip Fintech App Goes Offline Amid a Market Plunge*, WIRED MAG. (Mar. 9, 2020), <https://www.wired.com/story/when-hip-fintech-app-offline-amid-market-plunge/>.

⁶² Robinhood technically first filed a confidential S-1 with the SEC in March 2021 and later made the documents available to the public on July 1, 2021. *See* Brian Baxter, *Robinhood IPO Filing Shows CLO's Pay Valued at \$30*

Founded by Vlad Tenev and Baiju Bhatt, the company initially intended to be a platform that could simplify some of the necessary steps automated in buying and selling stocks.⁶³ The two began with companies called "Celeris" to take advantage of tiny price gaps in the market and "Chronos Research" that focused exclusively on high-speed trading.⁶⁴ In the wake of the Occupy Wallstreet movement in 2011, Tenev and Bhatt crystallized their pursuit to democratize finance through what Tenev described as "an idea and a product in one that nobody else has claimed" and that the core of the idea of the company recognizes "the financial system is an incredibly powerful tool, and it's been available only to the rich until now."⁶⁵ Like many tech companies, Robinhood accumulated many new users during the COVID-19 pandemic, amassing 13 million total users in May 2020.⁶⁶ In comparison, TD Ameritrade has been registered with the SEC since 1979, and the company merged with its longtime competitor Charles Schwab in 2019. Their shared company mission "to help people realize their financial dreams through investing" is telling of what sets them apart from Robinhood's free-form-fintech model, especially considering much of the additional trading fees are set aside for their more attentive interactive broker-assistance and customer service.⁶⁷

1. COMPARATIVE INTERFACE

Robinhood's platform interface is accessible either through the mobile application or accompanying website—both of which are very similar in terms of looks and functionality. Meanwhile, TD Ameritrade offers two separate styled platform interfaces—an original "simple" version and an "advanced" setup tailored towards professional day-traders. Both styles are accessible either through the mobile app or an accompanying website. Diving deeper into the companies' respective interfaces, you will notice they additionally differ in their range of offerings and underlying trading technology. Robinhood supports a limited range of asset classes to trade stocks, ETFs, options, and cryptocurrencies.⁶⁸ Alternatively, TD Ameritrade has a full menu of trading services.

Million (1), BLOOMBERG L. (July 1, 2021, 3:12 PM), <https://news.bloomberglaw.com/business-and-practice/robinhood-ipo-filing-shows-top-lawyer-pay-valued-at-30-million?context=search&index=0..>

⁶³ See Kolhatkar, *supra* note 29 (explaining that Tenev and Bhatt believed by putting the investing tools used by the rich into the hands of nonprofessionals, economic inequality can be reduced).

⁶⁴ See *id.* (noting that the founders later sold Chronos Research's software to hedge funds and investment banks, and subsequently converted Chronos itself into a free stock-trading application aimed at millennials, which was initially referred to as "CashCat").

⁶⁵ *Id.*

⁶⁶ See *id.* (finding Robinhood's success similar to other tech companies in Silicon Valley by behaving aggressively in pursuit of fast growth).

⁶⁷ *TD Ameritrade & Charles Schwab*, TD AMERITRADE, <https://www.tdameritrade.com/why-td-ameritrade/td-ameritrade-charles-schwab.html> (last visited Jan. 13, 2022).

⁶⁸ See Jean Folger, *Robinhood v. TD Ameritrade*, INVESTOPEDIA (Nov. 10, 2021), <https://www.investopedia.com/robinhood-vs-td-ameritrade-4587956> (noting that Robinhood's cryptocurrency offerings include Bitcoin (BTC), Bitcoin Cash (BCH), Bitcoin SV (BSV), Dogecoin (DOGE), Ethereum (ETH),

The Robinhood mobile app is considered a "fintech" because the technology effectively penetrated and converted the traditional operations of legacy trading and the U.S. financial system. By creating a mobile application to "democratize" finance and trading, Robinhood captured millennials' interest and sparked pricing wars with its competitors.⁶⁹ Robinhood did not just adopt a low-cost business model but also built the underlying technology platform required to make it possible through "automate[d] user signups, trades, and other important engagement activities without the need of employing a costly support staff" and massive infrastructure.⁷⁰ Ameritrade certainly has a digital and tech-based interface for users to trade online or via a mobile app, but this is distinguishable from Robinhood and what this paper identifies as fintech. Ameritrade's financial technology is a mere supplement to the traditional system of brokering, i.e., simply taking what was done in person or a phone call to a computer or mobile application. Meanwhile, Robinhood's tech and the nuanced platform itself shifted the burden of risk management to the consumer and initially snuck through the cracks of regulatory oversight. With its overly complex interface and accessibility to users who know little about the nuances of trading, the app is ripe for consumer manipulation and high risk of people losing their money without much thought, and the company currently has a series of additional civil lawsuits to deal with.⁷¹

Ethereum Classic (ETC), and Litecoin (LTC) while TD Ameritrade provides access to cryptocurrency only through Bitcoin futures).

⁶⁹ See John Detrixhe, *Robinhood's speedy rise is shaking up the brokerage market*, QUARTZ (June 20, 2021), <https://qz.com/1904510/how-does-robinhood-work/> (noting how as commissions evaporated and profits took a hit from pricing wars, an acquisition spree occurred with "bigger fish gobbling up smaller ones").

⁷⁰ Jake Kupperman, *Robinhood: Technological Disruption, Future Dominance, and Ethical Dilemma*, MEDIUM (Mar. 21, 2018), <https://medium.com/@jbkupperman/robinhood-technological-disruption-future-dominance-and-ethical-dilemma-4355225ca994>.

⁷¹ See, e.g., Def.'s Notice of Removal, *Kearns v. Robinhood Fin. LLC*, 3:21-cv-01014, at 11 (N.D. Cal. Feb. 9, 2021) (noting that Robinhood utilized gamification tactics to lure in its customers, for example "upon information and belief users are congratulated on their first trade by confetti"); *Mehta v. Robinhood Fin. LLC*, 5:2021-cv-01013 (N.D. Cal. Feb. 9, 2021) (alleging that Robinhood violated the California Consumer Privacy Act by making false representations regarding the nature and quality of its data security); Kate Kelly et al., *Robinhood, in Need of Cash, Raises \$1 Billion From Its Investors*, N.Y. TIMES (July 1, 2021), <https://www.nytimes.com/2021/01/29/technology/robinhood-fundraising.html> ("In protest, hundreds of thousands of users joined a campaign to give Robinhood's app the lowest one-star review and drive the company's rating down. Some investors also sued Robinhood for the losses they sustained after the company cut off trading in certain stocks and several lawmakers urged regulators to exercise more scrutiny of the company."); Jim Zarroli, *He Thought Day Trading Would Be a Thrill. He Ended Up Losing \$127,000*, NPR (Dec. 8, 2020), <https://www.npr.org/2020/12/08/943224222/he-thought-day-trading-would-be-a-thrill-he-ended-up-losing-127-000>; Jim Zarroli, *Millions Turn to Stock Trading During Pandemic, But Some See Trouble For The Young*, NPR (Aug. 11, 2020), <https://www.npr.org/2020/08/11/895054084/millions-turn-to-stock-trading-during-pandemic-but-some-see-trouble-for-the-young> ("It can be addictive and it can be akin to gambling. And I think that's where a lot of students get themselves in trouble . . .").

2. REGULATORY LENS

Before Robinhood, traditional brokers charged fixed-rate commissions to retail investors for nearly 200 years.⁷² Since the fintech entered the market in full force, all legacy brokerage firms, including TD Ameritrade, experienced significant downward pressure to cut their commission costs, a trend that some academics have coined as the "Robinhood Effect."⁷³

Like traditional broker-dealer services, Robinhood operates under regulation by the SEC and FINRA, and the company's intense popularity has not come without (delayed) regulatory pushback.⁷⁴ Being under the watchful eye of these regulators, the company effectively has a fiduciary duty to customers and a duty of best execution to obtain the most favorable price reasonably available to its users.⁷⁵

Robinhood has faced a great deal of controversy over making most of its money through payment for order flow (PFOF), a practice in which over-the-counter market makers, which are typically large financial institutions that act as wholesalers by buying and selling securities to satisfy the market make cash payments to retail brokerage firms for marketable retail customer order flow.⁷⁶ PFOF is not a business model unique to Robinhood, and the SEC and FINRA generally restrict broker-dealers from participating in certain transactions that may present potential conflicts of interest.⁷⁷ PFOF practices are not a regulatory compliance issue per se, but the SEC has stated that the presence of PFOF raises the potential for conflicts of interest for broker-dealers handling customer orders.⁷⁸

Further, regulators consider it difficult to rank Robinhood's payment for order flow (PFOF) numbers because the company does not publish its trading statistics.⁷⁹

In early June 2021, the SEC began to examine the market structure after the meme-stock trading frenzy earlier that year that influenced the share prices of companies like GameStop Corp. (GME) and AMC Entertainment Holdings, Inc. (AMC) to unexpected levels. In this investigation, the SEC scrutinized the company's PFOF process comparatively to trade orders

⁷² See John Divine, *How Robinhood Changed an Industry*, U.S. NEWS (Oct. 17, 2019), <https://money.usnews.com/investing/investing-101/articles/how-robinhood-changed-an-industry> (noting that up until the 1970s a single trade could cost hundreds of dollars).

⁷³ See Wang, *supra* note 28, at 49–50 (explaining how the "Robinhood effect" has forced traditional brokers to see a lower return from their investors, putting them under pressure to eliminate transaction fees or cut commissions).

⁷⁴ See *id.* at 44 (noting that the proliferation of free or low-cost investment apps has disrupted the financial industry's traditional ways).

⁷⁵ See *id.* at 48.

⁷⁶ See *id.* at 50–51 ("Market makers earn most of their revenue by charging a spread on the buy and sell price and transacting on both sides of the market.").

⁷⁷ See *id.* at 48 (stating that as a part of its duty of fair-dealing to its clients, a broker-dealer is required, under certain circumstances, to disclose material conflicts of interest to its customers).

⁷⁸ See *id.* at 51; Alexander Osipovich, *Robinhood's Debut is Clouded by SEC Scrutiny of Payment for Order Flow*, WALL ST. J. (July 7, 2021), <https://www.wsj.com/articles/robinhoods-debut-is-clouded-by-sec-scrutiny-of-payment-for-order-flow-11625655600>.

⁷⁹ See Folger, *supra* note 68 (noting that while the industry standard is to report PFOF on a per-share basis, Robinhood uses a per-dollar basis, and despite failing to disclose its price improvement statistics, price improvement is not of concern because its target customers tend to trade small quantities).

from individual investors are routed by brokerage firms to off-exchange, high-speed traders known as wholesalers, such as Citadel Securities, LLC and Virtu Financial, Inc. (VIRT).⁸⁰ These specific off-exchange traders must offer prices that are at least as good as the national best offer, which is what is offered by the official exchanges. At the conclusion of the investigation in October 2021, the SEC identified digital engagement practices and selling through wholesalers as potential areas for further consideration “[to] protect investors, maintain fair, orderly, and efficient markets, and facilitat[e] capital formation.”⁸¹ Ultimately, the SEC is concerned about a lack of transparency over the prices that off-exchange traders provide to their customers. SEC Chairman Gary Gensler has been highly critical of PFOF. He and other critics believe the practice inherently creates a conflict of interest for brokerages and incentivizes them to send customer orders to the highest bidder as opposed to the market maker that offers the best prices or fastest execution. Interestingly, Robinhood noted in its recently filed S-1 form that the banning of PFOF is a risk to its business model and would have a substantial impact on its operations.⁸² Meanwhile, TD Ameritrade's order routing algorithm aims for fast execution and price improvement and publishes price improvement statistics. According to this data, their most marketable orders get slightly more than 1½ cents per share (\$0.015) in price improvement. Additionally, TD Ameritrade receives some PFOF but claims its order execution engine doesn't prioritize it.⁸³

FINRA also recently ordered the company to pay approximately \$70M in penalties. The main findings in FINRA's investigation were: (1) Robinhood communicating false information to their clients (whether customers could place trades on margins, how much cash was in customer accounts, risk of loss customers faced in certain options, etc.), (2) inappropriately offering options trading to customers without exercising due diligence and too heavily using bots, (3) failing to reasonably supervise the technology that it uses to provide core broker-dealer services resulting in a series of app outages, and (4) failing to report thousands of written customer complaints they were required to report.⁸⁴ On the other hand, TD Ameritrade users benefit from around-the-clock customer service options.⁸⁵

Robinhood significantly changed the operational game aspect of trading. While Robinhood's free stock and options trading was revolutionary just five years ago, today, it is becoming status quo today. But the focus on free trading overlooks the other extremely

⁸⁰ *Id.*

⁸¹ *Staff Report on Equity and Options Market Structure Conditions in Early 2021*, SEC 43 (Oct. 14, 2021), <https://www.sec.gov/files/staff-report-equity-options-market-struction-conditions-early-2021.pdf>.

⁸² See Matthew Johnston, *How Robinhood Makes Money*, INVESTOPEDIA (Jul. 19, 2021), <https://www.investopedia.com/articles/active-trading/020515/how-robinhood-makes-money.asp#citation-27>; Osipovich, *supra* note 78; see also Hirsh Chitkara et al., *Everything You Need to Know About the Robinhood IPO*, PROTOCOL (July 1, 2021), <https://www.protocol.com/robinhood-ipo-s-1?rebelltitem=6#rebelltitem6> (noting that through the PFOF system, the company makes more money when more customers make trades, but such transactions could conflict with customers' best financial interests).

⁸³ Folger, *supra* note 68 (in the third quarter of 2019, the company received an average of \$0.0012 per share in PFOF).

⁸⁴ The SEC also fined Robinhood \$65M in December 2020 for similar findings related to misleading customers about revenue sources and failing to satisfy duty of best execution. See Securities Act Release No. 10906, “In the Matter of Robinhood Financial, LLC” (Dec. 17, 2020), <https://www.sec.gov/litigation/admin/2020/33-10906.pdf>.

⁸⁵ See TD Ameritrade, *supra* note 67.

important differentiators that made Robinhood a success: the streamlined five-minute signup process, no account minimums, the sleek app, its social nature, crypto trading, after-hours trading, the new high-yield cash accounts – Robinhood was building out these customer-centric features while industry mainstays were trying to maintain their oligopolistic, fee-heavy structures.⁸⁶

B. VENMO

Investors historically tend to protect their reserves during times of crisis, but online banking and cashless transactions through technology like Venmo proved increasingly popular throughout the COVID-19 pandemic.⁸⁷ Venmo is a well-known standalone fintech firm that allows individuals to transfer cash immediately to other individuals.⁸⁸ The company started as a "social payments app" (supporting payment transactions made between individuals and their mobile devices) for iOS and Android in 2009, and PayPal acquired it in 2013.⁸⁹ Since its initial launch, Venmo prides itself in offering users to send each other payments through their mobile application by simply connecting their credit card or bank account. However, Venmo puts a social twist on these payments because it allows you to "broadcast the fact that you just paid a friend \$5 for a beer over Twitter or Facebook."⁹⁰

Magdon-Ismail and Andrew Kortina, the company's founders, initiated the app as a solution to more and more people trying to access their bank on their smartphone mobile browsers. Since then, it has reached a critical mass of millions of users.⁹¹ The company does not charge individual users for sending or receiving payments, nor does it charge any monthly or annual fees. Instead, Venmo generates revenue via its interchange and withdrawal fees, interest on cash, and charging a 3% fee it charges for credit card transactions.⁹² Although Venmo has recently partnered with banks to offer debit and credit cards, these products are not related to the arguments made about fintech companies in this paper.⁹³

Inspired by Venmo's profit-making through their depositors' transactions, legacy U.S. banks decided to enter the peer-to-peer application market. In 2017, JP Morgan, Bank of America, Wells Fargo, US Bancorp, and Capital One joined together to launch Zelle to compete

⁸⁶ Divine, *supra* note 72.

⁸⁷ See Scott, *supra* note 52; John Heggstuen, *The Future of Payments: 2014* [Slide deck], INSIDER (Nov. 17, 2014), <https://www.businessinsider.com/the-future-of-the-payments-industry-2014-slide-deck-2014-7>.

⁸⁸ Stulz, *supra* note 7, at 8.

⁸⁹ Amelia Acker & Dhiraj Murthy, *What is Venmo? A descriptive analysis of social features in the mobile payment platform*, 52 *TELEMATICS & INFORMATICS* Art. 101429 (2020).

⁹⁰ Erick Schonfeld, *Social Payment Startup Venmo Raised \$1.2 Million and has a New iPhone App (TCTV)*, TECHCRUNCH (Sept. 16, 2010), <https://techcrunch.com/2010/09/16/venmo-1-2-million-iphone/>.

⁹¹ Acker & Murthy, *supra* note 89.

⁹² Andrew Bloomenthal, *Venmo: Its Business Model and Competition*, INVESTOPEDIA (Apr. 15, 2021), <https://www.investopedia.com/articles/personal-finance/010715/venmo-its-business-model-and-competition.asp>.

⁹³ *Id.* (Venmo offers a debit card in partnership with Mastercard (MA). As a result, users can use their Venmo balance to make purchases anywhere MasterCard is accepted in the United States. ATM withdrawals are free if they accept MoneyPass. Otherwise, there could be a fee. Then, in 2020, Venmo launched its credit card. Synchrony Bank issues the Venmo Visa Credit Card).

with Venmo and create an internal system for their bank members' peer-to-peer transactions.⁹⁴ Similar to Robinhood, as Venmo grew in popularity and more and more people turned to a cashless lifestyle, the company faced pushback over privacy issues and making money through selling users' personal information and behavioral data.⁹⁵

1. COMPARATIVE INTERFACE

Setting up a Venmo account is simple. Once downloaded on a mobile device, the application immediately prompts the user to connect their bank information (debit, credit, or savings account). The user is then free to transfer funds, request money, and take note of any transactions made by other users within their mobile contacts. One may argue that tech's interface looks more like a social media page than that of a financial tool. Other users have a contact photo and mark a transaction with a quick caption and usually a sampling of emoticons. Users even have the option to "heart" a transaction after it's been made and is open for viewing to anyone. Venmo has since allowed users to opt for more privacy. But it is Venmo's unusual socially-oriented approach to its interface that distinguishes it as a fintech rather than a digital adaption of peer-to-peer banking.

Unlike Venmo, which is a standalone fintech firm, Zelle's interface varies depending on what bank the user's deposits are associated with.⁹⁶ Zelle has an independent mobile application, but users may also use Zelle through their banking applications. Though Zelle eliminated the need for a third-party application like Venmo, the company's technology model has had some challenges with fraudulent activity and mal-intentioned transfers. Because funds are instantaneously transferred between accounts through Zelle, the app does not have precautions to verify purchases between parties, in some cases resulting in the receiver of funds closing their accounts and disappearing without a trace.⁹⁷

2. REGULATORY LENS

Mobile payments startups typically satisfy the definitions of a "money transmitter" under the Bank Secrecy Act and thus be subject to various registration, reporting, and recordkeeping

⁹⁴ Avery Hartmans, *How to use Zelle, the lightning-fast payments app that's more popular than Venmo in the US*, BUS. INSIDER (Jun. 14, 2018), <https://www.businessinsider.in/how-to-use-zelle-the-lightning-fast-payments-app-thats-more-popular-than-venmo-in-the-us/articleshow/64579931.cms>.

⁹⁵ Kate Dore, *Mobile payment app complaints are surging as more Americans go cashless*, CNBC (June 25, 2022), https://www.cnbc.com/2021/06/25/mobile-payment-app-complaints-are-surfing-as-more-americans-go-cashless.html?__source=iosappshare%7Ccom.google.Gmail.ShareExtension.

⁹⁶ Lauren Lyons Cole, *Venmo Just Settled with the FTC*, INSIDER (Mar. 5, 2018), <https://www.businessinsider.com/venmo-apple-pay-cash-vs-zelle-2017-12>.

⁹⁷ Sarah Perez, *Zelle users are finding out the hard way there's no fraud protection*, TECHCRUNCH (Feb. 16, 2018), <https://techcrunch.com/2018/02/16/zelle-users-are-finding-out-the-hard-way-theres-no-fraud-protection/>.

requirements designed to address money laundering.⁹⁸ However, Venmo's unique data usage and social flavors initially allowed them to circumvent these regulatory requirements.⁹⁹

Further, one of the biggest issues with third-party payment apps is that they are not banks. Fintechs lack the consumer protections that banks offer. Deposits at legacy financial institutions are insured up to \$250,000 by the Federal Deposit Insurance Company (FDIC). The cash people keep in Venmo or a similar app is not FDIC-insured like their checking account balance. In the event Venmo disappears, a user's funds could potentially disappear with it.¹⁰⁰ Money that is transferred through Zelle directly comes from partnering bank deposits and is therefore subject to FIDC protection.

In 2018, the FTC launched a regulatory complaint against Venmo for misleading users to think that the app used "bank-grade security systems" and other privacy concerns.¹⁰¹ Because Venmo is a third-party app between banks, issues arise when users "transfer" money through the app with insufficient funds in their bank account. Since the FTC suit was settled, Venmo now presents a notice with every request to transfer Venmo funds to a user's tangible connected bank account.¹⁰²

Though all financial systems are susceptible to some degree of fraud, inconsistent aspects of Zelle's design have also interestingly contributed to the users' vulnerability.¹⁰³ Even if users are victims of fraud, their availability and process to seek remedy depend on their specific bank.¹⁰⁴ In other instances, Zelle users have mistakenly transferred money to the wrong people (who fraudulently registered their phone numbers in the app) only to have that money lost forever.¹⁰⁵ Meanwhile, Paypal (who owns Venmo) offers a robust menu of protections over users' financial information and transactional activity.¹⁰⁶

However, Zelle's privacy issues by no means sanctify Venmo; as the company ventures into deeper unknown territory in the form of cryptocurrency, it has alarmed regulators once

⁹⁸ Allen, *supra* note 43, at 589. See 31 C.F.R. § 1010.100 (ff)(5); 31 C.F.R. § 1022.210 (2020).

⁹⁹ Ruth Reader, *How Peer-to-Peer Payment Pioneer Venmo Grew Up and Got Serious*, FAST CO. (Apr. 18, 2017), <https://www.fastcompany.com/40400786/how-peer-to-peer-payment-pioneer-venmo-grew-up-and-got-serious>.

¹⁰⁰ Cole, *supra* note 96.

¹⁰¹ *PayPal, Inc.*, 162 F.T.C. 3102 (2018).

¹⁰² Cole, *supra* note 96 (The full complaint reveals that although Venmo displays an estimated arrival time for the deposit, it is not guaranteed that a user will get their money by that time. Instead, the transfer will first undergo a review process that could result in the transfer being delayed or canceled or the funds being held by Venmo).

¹⁰³ Perez, *supra* note 97 (e.g., with some banks, the app will always notify customers when money is transferred, whereas the app will not with other banks).

¹⁰⁴ Stacy Cowley, *Zelle, the Bank's Answer to Venmo, Proves Vulnerable to Fraud*, N.Y. TIMES (Apr. 22, 2018), <https://www.nytimes.com/2018/04/22/business/zelle-banks-fraud.html> (noting "some customers who lost money were made whole by their banks; others were not.").

¹⁰⁵ Cole, *supra* note 96.

¹⁰⁶ *Security for Buyers*, PAYPAL, <https://www.paypal.com/us/webapps/mpp/paypal-safety-and-security> (last visited Jan. 13, 2022).

again.¹⁰⁷ As seen in PayPal's disclosures with the SEC this year, the CFPB has served the company with a rigorous documents request.¹⁰⁸

Because Venmo is technically not chartered like a legacy financial institution, they were initially arbitrated heavy regulatory burdens while concurrently integrating themselves into popular everyday transactions. Venmo is considered a fintech under the definition posited by this paper because the platform's tech is unique from legacy banking operations. Comparatively, Zelle is not a fintech but rather the legacy system's digital adaption of traditional transactional platforms to catch up to the trend of peer-to-peer payments. Venmo is a standalone fintech firm that commercialized social payments and changed our entire approach to making payments. At the same time, Zelle is a mere technology partnership with banks and other legacy financial institutions.

C. IMPACT OF ARBITRAGE AND CALLS FOR CONCERN

As established, fintechs have thrived in a regulatory climate ripe for arbitrage. This should present serious concerns for consumer protection, regulatory theory, and the stability of our broader financial system. Fintechs are uniquely powerful because of their increasingly competitive presence in the consumer market and their success in evading the rising tensions between robust regulation of traditional banking systems (concerning consumer protection laws and capital adequacy requirements) and financial institutions making money.

Regulatory arbitrage already exists and has successfully facilitated the birth of the "Wild West" of fintech companies. What is now at issue is the perpetuation of their risky business ventures and how it could impact overall financial stability and systematic risk. At the same time, government agencies and legislators are at a loss of how to regulate fintech. These companies themselves benefit from engaging in regulator shopping by claiming a personal identity crisis. Though this is not new to the U.S. legacy regulatory system, fintech's unknown nuances allow them to be selective about their regulating agencies and strategize over what kind of institution they are for regulatory purposes.

U.S. financial regulators have certainly been active in the past decade to address the harm of previous financial crises, but these reforms are "ill-suited to handle the challenges presented by fintech as a new model of financial institutions."¹⁰⁹ Fintech is so new and unconventional, leading regulators are only beginning to come to terms with its implications for financial regulation.¹¹⁰ However, this paper reveals a formula for what fintech is and what its operational lifespan looks like. Behind the forest of language and long categorical definitions, a fintech can be identified by its computing, interface, and data. Once the fintech is conceived, its low overhead company costs permit its launch and enable fintech firms to be more agile, innovate faster, and be more radical in their approach to innovation. By contrast, it is more difficult for

¹⁰⁷ Aislinn Keely, *The CFPB is looking into Venmo – and served parent PayPal with a documents request*, THE BLOCK (Feb. 6, 2021), <https://www.theblockcrypto.com/linked/94022/cfpb-venmo-paypal-documents>.

¹⁰⁸ *Id.*

¹⁰⁹ Allen, *supra* note 44, at 611 (claiming "unfortunately, however, the regulatory goals of consumer protection and financial stability may be losing salience as memories of the financial crisis fade, and in this context, some jurisdictions may be choosing to loosen regulatory protections for strategic reasons" (i.e. sandboxes.)).

¹¹⁰ Magnuson, *supra* note 6, at 1170.

traditional banks to adapt to some of the new technological developments because they need to comply with more extensive regulatory requirements"¹¹¹ Fintech companies are also successful in supplanting banks and be successful outside of banking because of the current regulatory climate in financial markets, legacy IT, and organizational frictions of diversified firms.¹¹²

Emerging technology in financial services needs critical study that goes beyond the promise of innovative opportunities, "as it may in some circumstances operate primarily as a method of regulatory arbitrage designed to benefit the innovator."¹¹³ While regulators must understand the grit of financial technology, it is essential that regulators do so quickly, because "fintech innovation has the ability to shake up the entire financial landscape in the coming years."¹¹⁴ Digital investment and personal payment fintech startups' size and business models (like early Robinhood and Venmo) leave them more vulnerable to adverse economic shocks than legacy financial institutions. They also pose unique challenges to financial regulations and broader systematic risk management.¹¹⁵ Fintech companies have revolutionized finance by decentralizing and automating financial services. Regulators and scholars must start to look more seriously at the costs and benefits of the shift from concentrated markets to dispersed ones.¹¹⁶ Without efforts to understand how distinguishable fintechs operate and consider the use of data by these tech companies, consumer harm, including discrimination and privacy violations, will also be inevitable.¹¹⁷

To reiterate, Robinhood and Venmo are just two illustrative fintechs in a continuously developing pool of many. Regulatory action, enforcement, and public/private market status of such fintech companies are equally in flux. Rather than get lost in the semantics of every violative practice or act of arbitrage, this section of the paper intended to grow understanding of what makes "true" fintech distinguishable and how legislative efforts should better anticipate their disruptive potential.

III. CONCLUSION

"Regulatory arbitrage" is not a new concept, but technology-based financial services companies, "fintechs", that have increased market share for consumers pose a new and unique threat to financial systems. Though it is not a new concept for financial services to take advantage of the gaps in our painfully complicated regulatory scheme, Bigtech's interest in

¹¹¹ Hornuf et al., *supra* note 5, at 4.

¹¹² Stulz, *supra* note 7, at 11.

¹¹³ Allen, *supra* note 44, at 610.

¹¹⁴ See Lee & Shin, *supra* note 18, at 43; Allen, *supra* note 44, at 610 ("[T]here is much excitement about the potential for fintech to 'provide new solutions old problems, including financial exclusion, the quality of consumer decision-making, agency costs, and compliance costs,' as a society, we should think more broadly about the impact of the innovation (especially if the technological solutions foreclose consideration of more direct, non-technological ways of addressing these old problems). In particular, technological improvements may come at the price of a more complex and fragile financial system or consumer harm.").

¹¹⁵ Wang, *supra* note 28, at 49.

¹¹⁶ Magnuson, *supra* note 6, at 1199.

¹¹⁷ Allen, *supra* note 44, at 610.

fintech may have created a new beast. Even if the regulatory arbitrage that made them so strong is struck down, fintechs will still have convenience, a dominant market presence, and a grossly powerful amount of consumer data on their side.

Fintechs have expanded the surface area of risk well beyond the financial system as regulators must now consider privacy, cyber risk, their internal lack of expertise, and the temptations they offer to risky consumer behavior. In the wake of the financial crisis, while regulators scrutinized over managing systemic risks and exclusivity in traditional banking and financial institutions, fintechs like Robinhood were able to circumvent regulatory hurdles under the guise of a consumer-friendly tech-interfaced investing platform. Such companies have taken advantage of the post-financial crisis rhetoric that the financial system collapsed at the fault of the "too few and too powerful."

Issues in regulatory arbitrage are exacerbated because lawyers are trying to adapt old laws to new services. The mere fact that a service is tech-facing completely changes the way the law applies. Legal experts need to recognize that the way technology has penetrated our daily activities changes the way we should regulate and apply the laws governing their use.

Especially with Congress's big haul against Big tech through a series of bills proposed on June 11th, 2021, it is very tempting to conflate big tech giants like Google, Amazon, Apple, and Facebook with "fintech" — though they may not yet have acquired bank charters or developed financial regulatory compliance teams, they certainly already have significant resources and political clout (which they have already started to exercise on financial services regulation).¹¹⁸ Similarly, recent discussion surrounding technology has been practically inseparable without mentioning Section 230 of the Communications Decency Act and its polarizing (mis)interpretations.¹¹⁹ While this paper primarily focuses on fintech benefitting from regulatory arbitrage, that regulation of technology is an ongoing concern well beyond the financial sector, especially as the digital world continues to penetrate our physical presence.¹²⁰ Industry scattered and surface-level legislative efforts could be useless without regulators properly understanding technologies' nuances and their damaging impact on consumers.

This paper only detailed the nuances of fintech through Robinhood and Venmo because, as mentioned earlier, it is impossible to comprehend new financial technology at the same rate it is being developed and popularized by consumers. These example fintechs are distinguishable from other self-described "fintech" companies that merely assist legacy banking practices to enter the digital world because their operational tech introduced new ways of participating in financial markets and successfully did so through arbitrage of traditional regulatory barriers.

Rising fintechs like Robinhood and Venmo are not only here to stay, but they are multiplying exponentially. While legacy financial institutions think they are catching up to the financial technology craze by updating and digitizing their traditional operations, the real fintechs have made their mark and are inspiring their spin-offs. Society's approach to interacting with finance is already changed. It is up to us to take organic thought into understanding the language of technology and its inapplicability to legacy regulatory strategies. Given the current

¹¹⁸ Allen, *supra* note 44, at 612 (referring to Big Tech's lobbying group "Financial Innovation Now").

¹¹⁹ See Gilad Edelman, *Everything You've Heard About Section 230 Is Wrong*, WIRED MAG. (May 2021), <https://www.wired.com/story/section-230-internet-sacred-law-false-idol/>.

¹²⁰ See Gregory M. Dickinson, *Rebooting Internet Immunity*, 89 GEO. WASH. L. REV. 347, 349, 359, 360, 368, 399 (2021).

regulatory system favors piecemeal changes in reaction to distinct market developments or financial crisis, a broad regulatory reform push is unlikely to keep pace with developing disruptive technology.¹²¹

While Robinhood celebrates its first few months on the public market, only time will tell if U.S. financial regulators are ready to internally disrupt their legacy system and understand fintech for what it is and recognize its nuanced role in the systemic risk of the global economy.¹²²

IV. RECOMMENDATIONS

As the U.S. has established an infinitely complicated and accretive regulatory system, legislators face a difficult task in tackling technology's arbitrage of the system. Though this paper did not delve into the technicalities of exact regulatory loopholes; instead, it has advocated for a deconstructed understanding of what technology is and how it relates to our legacy system of financial services. In a similar vein, legislators and regulators may benefit from a back to the basics approach in dissecting the policy behind their regulations and reassessing public interest. The present practice is to amend the old when the new causes problems, but it would be more effective to understand and appreciate what makes the new different. Technological advancement has always been the benchmark of how our society has changed and adapted. However, what is different now is that modern technology advances and establishes itself before its users and regulators can grasp its meaning and potential. Regulatory arbitrage is not necessarily a bad thing either — it is an opportunity for government actors to realign themselves with societal progression. However, these efforts have proven unsustainable without understanding the basics of technology and a significant lack of desire to. Rather than proposing new rules that cannot match the speed of fintech's rate of progression, legislators should consider adopting a more collaborative approach with technology players that implements this paper's language and policy points. The complexity of our regulatory systems has left open opportunity for harmful behavior and moving forward, less (but more intentional) regulation may be more.

¹²¹ Joe Adler, *Can Regulators Catch Up to Tech Changes?*, AM. BANKER, <https://www.americanbanker.com/news/can-regulators-catch-up-to-tech-changes> (last visited Jan. 13, 2022).

¹²² Alex Wilhelm, *Robinhood is now a stonk*, TECHCRUNCH (Aug. 4, 2021), <https://techcrunch.com/2021/08/04/robinhood-is-now-a-stonk/>. See also Maggie Fitzgerald, *Robinhood loses active users in the fourth quarter, forecasts weak revenue*, CNBC (Jan. 27, 2022), <https://www.cnbc.com/2022/01/27/robinhood-shares-tumble-9percent-after-first-quarter-revenue-forecast-is-well-below-estimates.html> (reporting “a bleak revenue forecast for the first quarter of 2022 . . . as its latest earnings report showed a decline in active users.”).