GLOBAL RULES FOR A GLOBAL MARKET PLACE? – REGULATION AND SUPERVISION OF FINTECH PROVIDERS

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ABSTRACT

Financial technology (FinTech) revolutionizes the way in which financial services are rendered. Although this phenomenon is not new, it has taken on a novel dimension. Markets that were once national are morphing into global ones. The current interest in regulating them to some extent exceeds that of traditional services. This article illustrates the many different needs for regulating FinTech providers, from the protection of investors and consumers to the fight against money laundering and tax evasion. The article demonstrates that these questions cannot be adequately addressed in a laboratory-free space or by self-regulation. It also shows that idiosyncratic national rules would result in legal fragmentation and deprive the world of the benefit that digital services can provide. The paper therefore suggests that global standards would be the best solution for the regulation of global services. It proposes to re-conceptualize the FSB and to transform it into a "Financial Stability and Innovation Board." In light of the diverging customs, knowledge, and practices of residents around the world, the global standards need to be complemented by tailored national rules. Global rule harmonization will eliminate differences in supervision. Regulatory competition and arbitrage might incentivize countries to lower their supervisory standards and to accept negative externalities for residents of other states in order to become a global FinTech hub. This tendency must be countered by a competition for the strictest quality of supervision. To trigger such competition, this article suggests implementing a global standard to require certain information about the competent supervisor to be made public in any marketing and customer communication by a FinTech service provider. If the quality and value of all FinTech supervisors are publicized, a run for quality will follow.

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INTRODUCTION

With the world shrinking into a single marketplace, the question of who should regulate what emerges. The dangers for public and private interests have not waned in the internet era, but avoiding them becomes increasingly difficult for regulators confronted with new technologies that transcend national borders. At the same time, these technologies hold great promise for enhancing welfare, in particular for those countries exporting such services. The result is a tension with respect to the strategy of regulating new global services.

This tension is most clearly seen in FinTech, a powerful new phenomenon in which the lucrative areas of technology and finance merge. FinTech services such as online payment systems, crowdfunding platforms, or bitcoin exchanges

are transforming the way in which banking and finance is done.[1] Though these phenomena raise a variety of regulatory needs, they often fall between the cracks of traditional legislation.[2] Before any domestic framework can be applied to them, a fundamental preliminary question arises: Which state should regulate and supervise them?

The question of jurisdiction over international financial markets is not new.[3] Yet FinTech poses it in a wholly novel and much more dramatic way than ever before. Traditionally, financial services involved a physical element, such as the signing of documents or the handing over of cash. In addition, there was usually an intermediary present in the country of service. It was therefore relatively easy to regulate and supervise them locally. This has all changed with the advent of new services. The new financial services are offered from a distant location, they can be ordered from anywhere without the need for a local intermediary, and they are rendered completely within the virtual universe without the need for any physical contact or exchange between the provider and the customer. Consequently, states struggle to maintain their regulatory and supervisory powers.

These problems are compounded by regulatory competition. Different countries and cities are vying for start-ups and established providers of FinTech services. States strive to become the financial hub of the internet era, from which services are instantaneously and seamlessly transmitted around the world. They try to attract FinTech firms by offering certain privileges, such as "tech neutrality" or a "regulatory sandbox."

In order to safeguard legitimate public and private interests, other countries – the recipient states of FinTech services – may decide to slam on the breaks by either prohibiting certain services outright or submitting them to stringent national conditions. The differences between national regimens will add to the providers' costs. This runs directly against the providers' business model, which is built on economies of scale. Technological innovation cannot reach its full potential and will often be nipped in the bud when faced with a fragmented legal landscape. The obvious alternative, a uniform global framework for FinTech, is mostly illusory and would also close down any testing ground for regulators.

The combination of ineffectiveness of national law with regard to the new technologies and the regulatory competition surrounding them illustrates the

[1] Douglas W. Arner, Janos Barberis & Ross P. Buckley, *The Evolution of FinTech: A New Post-Crisis Paradigm?*, 47 GEO. J. INT'L L. 1271, 1271 (2016) (explaining that "FinTech" refers to the use of technology to deliver financial solutions).

[2] For an example of the difficulties of capturing bitcoin with traditional regulatory tools, see Primavera De Filippi, *Bitcoin: A Regulatory Nightmare to a Libertarian Dream*, 3 INTERNET POL'Y REV. 1, 5–7 (2014); Kevin V. Tu & Michael W. Meredith, *Rethinking Virtual Currency Regulation in the Bitcoin Age*, 90 WASH. L. REV. 271, 313–45 (2015).

[3] *See, e.g.*, Joel P. Trachtman, *Conflict of Laws and Accuracy in the Allocation of Government Responsibilities*, 26 VAND. J. TRANSNAT'L L. 975 (1994); Joel P. Trachtman, *International Regulatory Competition, Externalization, and Jurisdiction*, 34 HARV. INT'L L. J. 47 (1993).

challenges regulators face when trying to adopt a legal framework for FinTech. The goal of this article is to discover new ways of regulation and supervision that allow innovative financial firms to grow while at the same time satisfying the need to protect vital public and private interests. This article will try to offer new alternatives between a fragmented global legal landscape and a complete freedom from regulation. To do this, it will rely on market mechanisms – in particular free consumer choice – combined with a minimum regulation in the public interest and the transparency necessary for a consumer's choice of a particular regime to be an informed one.

The article will proceed in five sections as follows. The first Part outlines the regulatory challenges posed by FinTech and strategies to address them. The second Part sets out the plethora of various national and local strategies that currently exist to deal with this new phenomenon. The third Part demonstrates how these strategies are bound to fail given the transnational nature of the new services. The fourth Part includes practical proposals on how minimum regulation in the public interest could be harmonized globally and introduces the idea of morphing the FSB into a "Financial Stability and Innovation Board." It also pinpoints the areas in which regulatory competition between the states continues to be helpful, such as consumer protection. The fifth Part then formulates a proposal to guarantee that this competition does not lead to a downward spiral, namely through the introduction of a rating system for financial supervisors.

I. FINTECH'S PROMISES AND CHALLENGES

A. *The Transformative Power of FinTech*

FinTech is changing our lives. Almost any financial service can now be substituted with an online version. In place of payments made through banks, payments can be channeled through intermediaries such as PayPal, Google Pay or ApplePay. These "alternative payment systems" allow their customers to pay for goods and services over the internet by merely providing the transaction details to the merchant while their credit card data is kept confidential.[4] So-called "micro-lending" platforms allow lending via the internet.[5] These websites collect money from investors and distribute the funds in the form of small loans to start-up companies or individual entrepreneurs.[6] Peer-to-peer lending assists

[4] Kevin V. Tu, *Regulating the New Cashless World*, 65 ALA. L. REV. 77, 106 (2013) (explaining how payment services allow customers to make a payment directly from the merchant's website).

[5] Chris Brummer, *Disruptive Technology and Securities Regulation*, 84 FORDHAM L. REV. 977, 1016–17 (2015) (explaining the rise of microlending websites).

[6] The idea of microfinance was invented by Nobel prize winner Muhammad Yunus and first applied in Bangladesh, see MUHAMMAD YUNUS, BANKER TO THE POOR: THE STORY OF THE GRAMEEN BANK (Aurum Press,2003). It received a boost by technological innovations

investors and borrowers around the world in finding each other and entering into contracts.[7]

FinTech can also be used to allocate money. Crowdfunding is a method by which entrepreneurs can raise capital via an online interface.[8] Companies like Kickstarter, Indiegogo and MicroVentures operate websites and "apps" on which start-up companies can present their projects to potential funders.[9] Typically, the funders are not remunerated in dividends or interest and instead merely receive perks, such as a free product of the new business. A more capitalist version of crowdfunding is "crowdinvesting," whereby the investor becomes a shareholder of the start-up company.[10] Crowdfunding and crowdinvesting firms resemble a classic investment or private equity fund in that they collect money for a specific project. The crucial difference is that technology helps to establish more direct contact and monitoring between investors and entrepreneurs compared to traditional funds.

Even the very notion of money is being put into doubt by FinTech. Virtual currencies, such as bitcoin, increasingly gain legitimacy.[11] They can be used either to pay for products or services online or to swap against legal tender (e.g., U.S. dollars) on bitcoin exchanges. Although virtual currencies are still a far cry from replacing state-issued money, one must bear in mind that they are still in their infancy and have tremendous potential for growth.[12] Moreover, the

such as websites and mobile applications ("apps") that greatly facilitate the process of making donations.

[7] Brummer, *supra* note 5, at 1016 (describing how Prosper.com set up the first website in the US for peer-to-peer lending).

[8] *Id.* at 1015 (noting that the definition of "crowdfunding" has been subject to some dispute).

[9] *Id.* at 1015–1018 (describing the business models of crowdfunding and crowdinvesting websites).

[10] *Id.* at 1015 fn. 207 (noting that the term "crowd investing" is often used by market participants to denote crowdfunding programs where investors acquire equity in the venture).

[11] For a concise definition of a virtual currency, see Lawrence Trautman, *Virtual Currencies: Bitcoin & What Now after Liberty Reserve, Silk Road, and Mt. Gox*, 20 RICH. J. L. & TECH. 1, 3 (2013) (defining a virtual currency as "a digital unit of exchange not backed by a government-issued legal tender") (quoting U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-516, VIRTUAL ECONOMIES AND CURRENCIES: ADDITIONAL IRS GUIDANCE COULD REDUCE TAX COMPLIANCE 3 (2013)). *See also* Isaac Pflaum & Emmeline Hateley, *A Bit of a Problem: National and Extraterritorial Regulation of Virtual Currency in the Age of Financial Disintermediation*, 45 GEO. J. INT'L L. 1169, 1172 (2014) (defining a virtual currency as "a medium of exchange circulated over a network, typically the internet, that is not backed by a government").

[12] *See* Pflaum & Hateley, *supra* note 11, at 1182 (stating that bitcoin may provide over 124 trillion units of exchange if split into tiny denominations).

underlying blockchain technology[13] is already making inroads into other fields. For example, it may be used to revolutionize the settlement process for financial assets.[14]

B. *The Market-Integrative Force of FinTech*

FinTech is not only transforming how financial services are performed, but also changing the boundaries of the market itself. Traditionally, financial services have been rendered locally by banks and other intermediaries, but revolutions in communications and data treatment have allowed the emergence of global service providers. The integrative force of these new technologies create new global markets. These characteristics shall be summarized here under the following headings: ubiquity, disintermediation, and concentration.

Ubiquity means that customers can access the services anywhere in the world. They no longer need to turn to a local provider for banking or other financial services. Instead, they can use online offerings through the click of a button.[15] Services that were once performed locally are now rendered globally.[16] Take for instance payment services: traditional cross-border or domestic payments involve taking cash to a bank or money transmitter, like Western Union, which then sends the money to a recipient in another location.[17] New competitors like PayPal, ApplePay, GooglePay and Square use a very different business model.[18] They have no brick-and-mortar operations and instead exclusively offer web-based services.[19] The client opens an account online and primarily uses the service to make payments, potentially via a mobile phone.[20] It is true that traditional banks are also increasingly providing tools and possibilities for electronic payment services. For example, online banking offers the opportunity to transfer money without the need to enter a branch.[21] These services are

[13] *See id.* at 1175 (explaining that the Block Chain is a computer file maintained by many network participants, which is updated and validated against a ledger each time a transaction is added).

[14] Robleh Ali et al., *Innovations in Payment Technologies and the Emergence of Digital Currencies*, 54 BANK OF ENG. Q. BULL. 262, 271 (2014) (predicting that it will be possible to record any type of financial asset on the distributed ledger that is behind bitcoin).

[15] *See* Tu, *supra* note 4, at 101–09 (describing the business model of modern payment service providers).

[16] *See id.*

[17] *See id.*

[18] Adam J Levitin, *Pandora's Digital Box: The Promise and Perils of Digital Wallets*, 166 U. PA. L. REV. 305, 315-34 (2018) (describing different types of 'digital wallets' and the changes they introduce).

[19] *See* Tu, *supra* note 4, at 101–09 (describing the business model of modern payment service providers).

[20] Lawrence J. Trautman, *E-Commerce, Cyber, and Electronic Payment System Risks: Lessons from PayPal*, 16 U.C. DAVIS BUS. L.J. 261, 278 (2016) (noting "website and mobile application onboarding, ease-of-use and accessibility" as competitive advantages of PayPal).

[21] Tu, *supra* note 4, at 100 (explaining electronic money transfers via bank accounts).

distinguishable from FinTech in that banks continue to maintain a physical component of their business, to which the online business is simply a corollary, albeit a very important one. FinTech providers, on the other hand, have no physical branches and are accessible from anywhere in the world.

Disintermediation means that the new technologies reduce the number of middlemen that are necessary to conduct a financial transaction.[22] This radically lowers transaction costs.[23] Again, one should be wary of exaggerating the differences between new technologies and traditional forms of financial services. Most traditional providers of financial services have recognized the virtues of modern technologies, and have equipped themselves with powerful operating systems.[24] However, humans are still needed to input the information for these systems to be able to process it.[25] The mere use of computers does not change the provider's relationship with the customer. There is a conceptual abyss that separates traditional banks that use computer systems from FinTechs. The latter establishes *direct* contact between the customer and the service provider.[26] This may even progress to the point that there is no longer any necessity for an intermediary, such as in the case of bitcoin, which has no issuer and can be transferred without the help of any firm simply by the decentralized confirmation of miners.[27]

Concentration is a consequence of both ubiquity and disintermediation. It means that FinTech services can be rendered from a single point on earth. PayPal may serve as an illustration. As of the first quarter of 2016, PayPal had 184 million active registered accounts[28] and operated in 200 different markets around the world.[29] Yet besides its headquarters in San Jose, California, it only has one foreign subsidiary in Luxembourg.[30] Traditional banks also operate cross-border without necessarily having a subsidiary or branch in every country in which they are active. Yet FinTech companies like PayPal are different: even where they have establishments in other countries, such establishments do not serve

[22] On disintermediation, see Brummer, *supra* note 5, at 1024–35 (describing the transformations of exchanges and broker-dealers' business through technology).

[23] *See id.*

[24] On the continuing role of traditional banks despite the FinTech revolution, see, for example JOHN HILL, FINTECH AND THE REMAKING OF FINANCIAL INSTITUTIONS 3 (Academic Press, 2018) (stressing that half of JPMorgan's accounts are opened by Millenials).

[25] *See* Brummer, *supra* note 5, at 1000.

[26] Arner, Barberis & Buckley, *supra note* 1, at 1276 (stating that new start-ups and established technology companies have begun to deliver financial products and services directly to businesses and the general public).

[27] On the working of bitcoin, see Trautman, *supra* note 11, at 48–53; Tu & Meredith, *supra* note 2, at 277–82.

[28] *See PayPal Reports Strong First Quarter Results*, BUS. WIRE (Apr. 27, 2016, 4:05 PM), https://www.businesswire.com/news/home/20160427006534/en/.

[29] *Id.*

[30] Trautman, *supra* note 20, at 286 (stating that PayPal is headquartered in San Jose and licensed in Luxembourg).

customers. They are often mere screens designed to comply with the regulatory requirements of the market, while the service is rendered from another point.[31] Physically, the firm would only exist at this one point. The concentration is compounded by a network effect: the more users that use PayPal, the more it will be accepted on the internet as a means of online payment, and the more it will make sense to become a PayPal customer. Thus, there is an almost unstoppable drive toward global extension.

This process is taken to the next level when services are completely decentralized. Such is the case with blockchain, where there is no single physical point on the earth from which the service is rendered.[32] Indeed, the need for a service provider disappears altogether. However, to be effective, blockchain users generally have recourse to an intermediary, such as a virtual currency wallet or exchange.[33] Hence the situation more closely resembles that of a concentrated service.

C. *Advantages and Disadvantages*

FinTech offers tremendous economic advantages. Automation allows huge cost savings.[34] Moreover, services are rendered at speeds that are incomparably faster than those of traditional providers.[35] Thanks to the market-integrative force of FinTech, firms also have the potential to tap a worldwide customer base.[36] This results in significant economies of scale, which can be transferred to the customers via lower fees.[37] Another advantage for customers is FinTech's ease of use. Services are convenient, offered 24/7, and can also be accessed anywhere.[38] Moreover, FinTech increases customer choice, pitting new market entrants against already established financial service providers. It also spurs

[31] Trautman, *supra* note 20, at 302 (quoting a disclosure statement of PayPal to the effect that the company might be subject to local laws because its services are accessible worldwide).

[32] Matthias Lehmann, *Who Owns Bitcoin? Private Law Meeting the Blockchain*, 21 MINN. J. L., SCI. AND TECH. 93, <PN> (2019) (stressing the a-national nature of the blockchain).

[33] William J. Luther, *Regulating Bitcoin: On What Grounds?*, *in* REFRAMING FINANCIAL REGULATION: ENHANCING STABILITY AND PROTECTING CONSUMERS 391, 394 (Hester Peirce & Benjamin Klutsey eds., 2016) (pointing out that intermediaries like Coinbase function as an exchange and an e-wallet service).

[34] Arner, Barberis & Buckley, *supra* note 1, at 1317.

[35] Brummer, *supra* note 5, at 1038.

[36] *Cf.* BUS. WIRE, *supra* note 28 and accompanying text (on PayPal's customer base in 200 markets around the globe).

[37] 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, 65 (2016) (noting that the gradual uptake and economies of scale allow the innovation to become dominant in due course).

[38] Levitin, *supra* note 18, at 320 (underlining that digital wallets can be accessed without a credit card).

competition, at least as long as it does not replace traditional firms altogether with global monopolies.

These benefits are reaped by customers around the world, particularly in underdeveloped financial markets. In this context, one has to bear in mind that half of the world's population remains "unbanked" to this day.[39] Technology allows people to access modern services without the need for sophisticated infrastructure. For instance, it is now common customers in developing countries to make online payments on their mobile phones.[40] FinTech also provides access to much needed and otherwise unavailable capital for firms and individuals in these countries.[41] This significantly empowers them because they receive the same transactional offers as customers in other parts of the world. Clients in countries with saturated financial markets also benefit from FinTech's lower transaction costs, greater accessibility, and convenience.

Despite all of these advantages, there is also a cause for concern. Like any other financial service, FinTech suffers from the risk of market failures.[42] There may be tremendous information asymmetries between the parties, for example, between the promoters and the funders of a crowdfunding project.[43] FinTech providers are also subject to the principal-agent problem that is present in any financial service, because clients may experience manifest difficulties in monitoring firms.[44] There also may be conflicts of interest, such as a crowdfunding platform that generates fees through project promotion, which thereby creates an interest in constantly increasing transaction volume.[45] Customers also face considerable credit and liquidity risks, such as when a payment service provider becomes insolvent.[46] On top of that, there is the danger

[39] Pflaum & Hateley, *supra* note 11, at 1171–1172.

[40] See Ali et al., *supra* note 14, at 265 for M-Pesa, an example of a service that grants access to financial services, including payments, to anybody with a mobile phone in many parts of the developing world; Dan Awrey & Kristin van Zwieten, *The Shadow Payment System*, 43 J. CORP. L. 775, 802 (2018) (describing how M-Pesa started in 2007 in Kenya and by 2016 was operating in 93 countries with around 134 million active accounts).

[41] *See* Awrey & van Zwieten, *supra* note 40, at 809.

[42] Jeremy Kidd, *FinTech: Antidote to Rent-Seeking FinTech's Promises and Perils*, 93 CHI.-KENT L. REV. 165, 179 (2018) (admitting that innovations may lead to consumer and societal harms if markets fail in significant ways).

[43] Rainer Lenz, *Konsumentenschutz im Crowdfunding*, *in* JAHRBUCH CROWDFUNDING 2015 (Oliver Gajda, Frank Schwarz, & Karim Serrar eds., 2015), *translated in "Take Care of the Crowd!" – Legal Protections of Retail Investors in Crowdfunding is Long Overdue*, FIN. WATCH (Dec. 8, 2015), https://www.finance-watch.org/take-care-of-the-crowd-legal-protection-of-retail-investors-in-crowdfunding-is-long-overdue/.

[44] For an example of the problems with Lending Club, see Ben McLannahan & Pan Yuk, *Lending Club Chief Executive Steps Down After Internal Review*, FIN. TIMES, May 9, 2016.

[45] Lenz, *supra* note 43.

[46] Ali et al., *supra* note 14, at 270 (describing risks in payment systems); Arner, Barberis & Buckley, *supra* note 1, at 1284–85 (stressing that fintech firms are subject to liquidity risks);

of blatant fraud, as in the case of the "decentralized autonomous organization" (DAO) *Ethereum*, a fully automated venture capital firm that raised 150 million USD, of which 50 million was subsequently diverted to a private internet address.[47]

Some of these problems are more pronounced in FinTech compared to conventional services. One example is operational risk, that is the danger that a service provider's operation is affected by an internal error or a failure of its information technology (IT).[48] Although traditional financial institutions can also suffer from technical glitches, an IT failure is more likely to occur with firms that entirely build their businesses on complex computer technology.[49] FinTech is also particularly vulnerable to security breaches or hacking through which third parties may misappropriate sensitive customer data.[50] The inevitable distance between the provider and the customer and the lack of personal contact also increase the risk for fraud.

In addition to the risk for its users, FinTech also poses dangers to public interests. For example, the anonymity that comes with a global marketplace may invite abuse by criminals. Virtual currencies, such as bitcoin, and the platforms on which they are traded have become a stomping ground for money-launderers, tax evaders, and drug or weapons dealers, as well as a means of blackmailing.[51] Furthermore, one must not underestimate the possibility that the demise of a FinTech operator may create a need for the state to step in, for example, with a bail-out. While most providers of electronic services are far from being "too big to fail," some perform functions that by their very nature are important for the stability of the financial system, such as payment services. Due to the concentration effect, the breakdown of one of these operators could cause harm to other institutions and require direct state intervention.[52] The insularity,

Awrey & van Zwieten, *supra* note 40, at 799–800 (highlighting the risks of illiquidity that clients face in the case of insolvency of a "shadow" payment service).

[47] Philipp Paech, *The Governance of Blockchain Financial Networks*, 80(6) MOD. L. REV. 1073, 1087 (2017) (describing that the programmers were able to reset past transactions and undo abusive transfers).

[48] Ali et al., *supra* note 14, at 270 (describing operational risk in payment systems).

[49] Basel Committee on Banking Supervision, *Sound Practices - Implications of fintech developments for banks and bank supervisors*, 5 (2018), https://www.bis.org/bcbs/publ/d431.pdf (highlighting that key risks associated with the emergence of FinTech include operational risk).

[50] Trautman, *supra* note 20, at 288–90 (citing PayPal's 10-K statement to the effect that the company may be subject to a data security breach).

[51] An example is the "sextortion" scam, in which blackmailers demanded a ransom to be paid in bitcoins, see Alexis Ong, *Bitcoin Scammers Used Sextortion to Blackmail Victims for Nearly $1 Million*, ASIA ONE (May 16, 2019), https://www.asiaone.com/digital/bitcoin-scammers-used-sextortion-blackmail-victims-nearly-1-million.

[52] Key Attributes of Effective Resolution Regimes for Financial Institutions, Fin. Stability Board, at 57 (Oct. 15, 2014) (stating a presumption that all financial market infrastructures, such as payment systems, are systemically important or critical).

automaticity, and the lack of transparency of the system may result in great obstacles to stop or revert any processes.

These problems are compounded by the difficulty of administering proper supervision over FinTech. It is hard to get a grip on global offerings, because it is very burdensome to control and hold providers accountably when digital financial services can be delivered anywhere there is an internet connection. The three particular features of FinTech – ubiquity, disintermediation, and concentration – pose especially difficult challenges for countries that want to domesticate these new services. The ubiquitous nature of the internet prevents regulators from reviewing transactions at their respective country's border. If a provider does not heed a regulator's orders or requests, the state would have to block access to its website, a move that would be hard to accept for administrations committed to open communication. Disintermediation makes it much more difficult to effectively regulate and supervise a FinTech offering. In many cases there will be only one provider that delivers its services from one location, for instance California or Hong Kong, and that will be beyond the remit of the supervisors in the rest of the world. Concentration means that the usual way of controlling the provider's local branches or collaborators does not work. The physical distance between the regulator and the provider may be enormous. It is not at all easy, for instance, to audit a United States or United Kingdom financial service company from Japan.

The three features reinforce and compound each other. A ubiquitous service is difficult to regulate. This is even more so when, due to disintermediation, there is no intermediary to turn to and when, because of concentration, the only natural persons working for the service provider are sitting in a distant country.[53] The natural response seems to be global supervision, yet there is no such thing as a global financial supervisor.[54] As a consequence, only national strategies are currently available.

II. NATIONAL AND LOCAL STRATEGIES TO REGULATE FINTECH

Regulators and legislatures around the world are reacting in various ways to the FinTech revolution. Responses come not only from Nation-States, but also from federal states and other entities that sometimes have adopted particular strategies.[55] The following provides a taxonomy of different approaches that will be given, ranging from a "hands-off" attitude to an outright prohibition of new services. These approaches will be evaluated as to how they respond to the challenges posed by FinTech.

[53] Pflaum & Hateley, *supra* note 11, at 1196 (noting that monitoring transactions in virtural currencies will be exceedingly difficult due to disintermediation and inconsistent regulatory approaches).

[54] *See* Tajinder Singh & Chris Brummer, *Does Today's World Need a Global Financial Regulator?*, 33 INT'L FIN. L. REV. 18, 18–20 (2014).

[55] *See infra* II.D for the example of the BitLicense.

A. *A Regulation-Free Zone*

It is reasonable to think that all problems relating to FinTech services can ultimately be solved by the free market. In fact, this may be the best way in order to not block their development. One could envisage a "free financial web" in which anyone might invest in the financial products and services of his liking. This is very similar to the plea that cyber-libertarians have made for the internet.[56] The same comparison has been drawn by the U.S. Commodity Future Trading (CFTC) Commissioner J. Christopher Giancarlo who has suggested adopting a "do no harm" regulatory approach, similar to the approach used in the early internet age, with regard to blockchain technology.[57] In his view, such an approach is necessary to foster innovation.[58]

The notion of a regulation-free environment may sound appealing. If consumers want to enjoy the benefits of FinTech services, a simple answer might be to provide this option. This may create the right incentives for consumers and firms alike. Knowing that they lack state protection, consumers would seek to fend for themselves. They would be motivated to look for information, to limit their exposure, or, if they cannot do so, to shy away from the market altogether. This, in turn, would impact FinTech firms. Reacting to their clients' attitudes, it would be in the best interest of FinTech firms to offer increased transparency and investor protection.

Paradoxically, the underlying technology behind FinTech can help to resolve the problems it also creates. Here, the internet is a real paradigm changer, creating the ability for investors to inform themselves about firms and their services, which allows them to protect themselves better against fraud using the advances of technology. For instance, investors can gather information of various FinTech services by reviewing ratings.[59] The increased signaling through reputation has the potential to overcome information asymmetries, thereby reducing the need for regulation.[60] The internet can also be of help in other ways. It allows an investor to control his account with a payment service provider in real time, thus mitigating the principal-agent problem. He or she can

[56] On how the internet might revolutionize current democratic discourse and institutions, see, for example, LINCOLN DAHLBERG & EUGENIA SIAPERA (eds.), RADICAL DEMOCRACY AND THE INTERNET (Palgrave Macmillan, 2007).

[57] J. Christopher Giancarlo, Commissioner, Commodities Futures Trading Commission, Keynote Address at the Cato Institute: Cryptocurrency: The Policy Challenges of a Decentralized Revolution (Apr. 12, 2016).

[58] *Id.*

[59] *See, e.g.*, *Kickstarter*, GOOGLE PLAY https://play.google.com/store/apps/details?id=com.kickstarter.kickstarter&hl=en (last visited Nov. 23, 2019) (showing the rating and reviews of the crowdfunding application Kickstarter).

[60] On this connection, see Lior Strahilevitz, *Less Regulation, More Reputation*, *in* THE REPUTATION SOCIETY: HOW ONLINE OPINIONS ARE RESHAPING THE OFFLINE WORLD 69–72 (Hassan Masum & Mark Tovey eds., 2011) (arguing that ratings of banks would provide a superior alternative to litigation and regulation).

also monitor the progress of a crowdfunding or crowdinvesting project online. The internet may also be able to overcome collective action problems in anonymous groups, e.g., where investor forums are used for organizing class actions.

While the free-market solution has many advantages, it is unlikely to solve all problems relating to FinTech. First, it seems illusory that all users of FinTech services would be able to fend for themselves. Being tech-savvy is not equivalent with being finance-savvy. In many instances, customers would be unlikely to forgo the time and effort needed to inform themselves, instinctively trusting that there would be some form of state protection. Even if customers were to gather information, it is possible that they would be incapable of analyzing it. Reputational signals via electronic media only help so far. Every user does not rate each service they use, and ratings may be tweaked by the provider. Moreover, such ratings merely reflect the *past* behavior of the provider, which allows only minimal conclusions about future performance. Even when customers are equipped with all of the all necessary information, they do not automatically make the best choice because they suffer from severe behavioral problems due to bounded rationality.[61] They may ignore known risks in order to gain easier and cheaper access to financial services. There is a strong probability that customers would not adequately take risks into consideration, and would instead be over-reliant or suffer from other behavioral biases.

Third, a regulation-free space would not eliminate the danger of externalities caused by clients themselves. Specifically, it would not stop users from abusing FinTech for illegal purposes, such as money laundering, terrorism, or tax evasion. It could also pose a danger for financial stability in the case of the fallout of a systemically important FinTech provider. Although arguably no systemically important FinTech providers currently exist, this may change in the future.[62] The protection of the general public against the resulting dangers cannot be entrusted to technology.

In short, there are multiple reasons why regulators cannot sit idly by while FinTech continues to blossom and flourish. The inherent risks require regulatory intervention.[63] A regulation-free space is not the answer to the emergence of FinTech, and a comparison to the circumstances at the dawn of the internet era

[61] Bounded rationality means that the rationality of decision-making of individuals is limited by various factors, in particular the information available to them, the cognitive limitations of their minds, and the finite amount of time they have to make a decision. For the seminal works on bounded rationality, see HERBERT A. SIMON, MODELS OF MAN: SOCIAL AND RATIONAL (1957); Herbert A. Simon, *Theories of Bounded Rationality*, *in* DECISION AND ORGANIZATION (C.B. McGuire & Roy Radner eds.,1972).

[62] Christina Parajon Skinner, *Regulating Nonbanks: A Plan for SIFI Lite*, GEO. L. J. 1379, 1418 (2016) (estimating that some players in the FinTech sector may emerge as systemically important in the coming years).

[63] In the same vein, see Pflaum & Hateley, *supra* note 11, at 1194 (stating that regulatory authorities must address the risks posed by the regulatory gap created by disintermediation).

falls short.[64] The crucial factor distinguishing the two situations is that the risks involved in using the internet were relatively benign, whereas the dangers of investing, trading or paying online are exponentially larger.[65] The risks of using modern technology in finance by far exceed the potential cost savings. For this reason, clients and the general public need protection through rules.

B. *Self-Regulation*

One way to draft efficient rules is through the industry itself. In many areas, codes of conduct, best practices, or other measures adopted by self-regulatory organizations can play an important role. Firms have an interest in ensuring a level playing field, excluding unfair competition, and maintaining the reputation of their industry.[66] By participating in self-regulatory organizations and subscribing to their codes, firms may signal to the market that they are particularly trustworthy. When they are unwilling to participate or try to free-ride, it is also possible to force them by law to comply. Indeed, some countries, such as the United States[67] and Switzerland,[68] require that FinTech providers join self-regulatory organizations.

Self-regulation presents a number of advantages over state regulation: first, it incorporates the experience and expertise of the industry representatives, who are the most knowledgeable about industry problems.[69] Second, the fact that the obligations are drafted by those who are subject to them ensures a higher rate of compliance. Third, the cost of information, monitoring and enforcement may be lower.[70] Lastly, industry rules are not territorially limited and can be adopted on a worldwide scale. In this way, the mismatch between the perimeter of the regulator and the scope of the market can be eliminated.[71]

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[64] *See* Giancarlo, *supra* note 57.

[65] Skinner, *supra* note 62 at1418 (citing the risk of a credit crunch potentially triggered by FinTech).

[66] On the economics of self-regulation, see Thomas Gehrig & Peter-J Jost, *Quacks, Lemons, and Self-Regulation: A Welfare Analysis*, 7 J. REG. ECON. 309 (1995); Anthony Ogus & Emanuela Carbonara, *Self-Regulation*, *in* ENCYCLOPEDIA OF LAW AND ECONOMICS (2011) (ebook); Avner Shaked & John Sutton, *The Self-Regulating Profession*, 48 REV. ECON. STUD. 217 (1981).

[67] *See* 15 U.S.C. § 77(d).

[68] SWISS FIN. MKT. SUPERVISORY AUTHORITY FINMA, CIRCULAR 2009/1 GUIDELINES ON ASSET MANAGEMENT, (Dec. 18, 2009).

[69] Saule T. Omarova, *Rethinking the Future of Self-Regulation in the Financial Industry* 35 BROOK. J. INT'L L. 665, 670 (2010)

[70] Gehrig & Jost, *supra* note 66, at 319; Ogus & Carbonara, *supra* note 61, at 233.

[71] *See* Omarova, *supra* note 69, at 670.

There is no doubt that codes of conduct and similar measures can contribute to better governance of FinTech.[72] They can increase investor protection and enhance the reputation of the industry. Yet despite these benefits, it would be naive to blindly rely on self-regulation. It is unlikely the industry will adhere to socially optimal norms as it is more likely to increase its profits by adopting rules at the expense of the public interest.[73] The industry has a strong incentive to conduct itself below socially desirable norms. This weakness of self-regulation was particularly apparent with the global financial crisis.[74] It is difficult for private rule-making to conceive of and address this flawed incentive structure. The problem is compounded by industry peculiarities that make collective action difficult[75]: providers may come from any Part of the world, which encompasses different values, business models and cultures. Due to their global spread, a close relationship between industry representatives is unlikely to develop. Each of these problems creates obstacles for self-regulation.

Therefore, exclusively relying on self-regulation by the industry alone is not a viable option. That does not, however, exclude a renewed model of self-regulation, where regulators set clear goals to practice and monitor compliance.[76] This path is increasingly adopted by regulators. For example, the Swiss Financial Markets Authority (FINMA) sets mandatory minimum standards for the creation of industry codes of conduct.[77] FINMA calls them "minimum standard for minimum standards."[78] This new method seeks to combine the virtues of self-regulation with those of state regulation. Yet by limiting state intervention to the "minimum of the minimum," the state reduces its grip ever further. The industry standard will not succeed without some form of state intervention. Given the limited territorial jurisdiction of FINMA, the standards can only affect those self-regulatory bodies and industries that are within the remit of the Swiss authorities. They do not extend to outsiders, putting into doubt its usefulness and effectiveness.

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[72] For a plea for self-regulation with regard to bitcoin, see De Filippi, *supra* note 2, at 9 (arguing it would be wise to first look whether satisfying solutions are forthcoming from the market).

[73] Shaked & Sutton, *supra* note 66, at 225.

[74] *See, e.g.*, Brooksley Born*, Deregulation: A Major Cause of the Financial Crisis*, 5 HARV. L. & POL'Y REV. 231, 232 (2011) (denouncing deregulation as being based on the false assumption that self-regulation would be sufficient to protect the financial market and the economy against excesses of the market); *but see* Omarova, *supra* note 69, at 670 (arguing for a new model of financial sector self-regulation).

[75] MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (Harvard University Press ed., 1965) (showing that groups will dedicate fewer resources than optimal to the collective satisfaction of their common interests).

[76] For the financial industry in general, see Omarova, *supra* note 69, at 670–71 (recognizing that a strong and effective system of government regulation is critical to the proper functioning of financial sector self-regulation).

[77] SWISS FIN. MKT. SUPERVISORY AUTHORITY FINMA, *supra* note 68.

[78] *Id.* at 3.

C. *Tech Neutrality*

Though it is true that FinTech cannot be left to regulate itself, one may at least try to adapt current regulatory rules so as to not block its development. Many FinTech initiatives by legislatures and regulators around the globe have precisely this aim. A key principle is "tech neutrality," i.e., the requirement that regulation should treat traditional financial services and FinTech on an equal footing.[79]

One can discern two versions of Tech Neutrality. The first is tech friendly and tries to treat FinTech similarly to traditional modes of operation.[80] Most modern legislation dealing with FinTech fall into this category. One example is a California statute that allows residents to pay for state services with traditional currencies or with bitcoin.[81] Similarly, the Swiss FINMA accepts the use of video and online identification of clients as being compliant with its anti-money laundering legislation.[82] For FinTech firms, this development is good news because it allows them to compete with traditional operators. These new rules are designed to introduce more consumer choice and competition.[83] In the eyes of the proponents of Tech Neutrality, this principle is necessary to create a level playing field between traditional and modern financial service providers.[84]

Tech Neutrality can be also understood in the opposite sense, for example, that tech firms should have to obey the same rules as traditional service providers.[85] According to this view, new technologies should not benefit from

[79] For a definition of Tech Neutrality, see COMMONWEALTH GOVERNMENT, EXPLANATORY MEMORANDUM, ELECTRONIC TRANSACTIONS BILL (1999) ("Technology neutrality means that the law should not discriminate between different forms of technology - for example, by specifying technical requirements for the use of electronic communications that are based upon an understanding of the operation of a particular form of electronic communication technology.").

[80] *See, e.g.*, Dane Weber, *Tech Neutrality in Australian Signature Law*, 24 J.L. INFO. & SCI. 101, 110 (2015) (describing the Australian Electronic Transactions Act that allows the digital signature of contracts).

[81] Assemb. B. 129, 2013-2014 Reg. Sess. (Cal. 2014). The statute stated that "No corporation, social purpose corporation, association, or individual shall issue or put in circulation, as money, anything but the lawful money of the United States.".

[82] SWISS FIN. MKT. SUPERVISORY AUTHORITY FINMA, CIRCULAR 2016/7 VIDEO AND ONLINE IDENTIFICATION, (Mar. 3, 2016).

[83] Weber, *supra* note 80, at 109 (asserting that the law would impact freedom of contract and create technological monopolies if it were to choose one signature technology over another).

[84] *Id.*

[85] This is the classic meaning of tech neutrality, see Brad A. Greenberg, *Rethinking Technology Neutrality*, 100 MINN. L. REV. 1495, 1500 (2015) (debating the application of identical rules to different forms of copyright violations); Paul Ohm, *The Argument against Technology-Neutral Surveillance Laws*, 88 TEX. L. REV. 1685, 1687 (2009) (discussing the extension of surveillance powers to all forms of electronic communication).

any exceptions, amendments, or accommodations to existing rules.[86] If one applies this reasoning to FinTech providers, they would have to obey, for example, the same rules regarding capitalization and governance as a classic "brick-and-mortar" bank. They would also be subject to the full breadth of provisions on money laundering and the prevention of terrorism financing. Bitcoin exchanges, for example, could not rely on the particular anonymity that comes with the virtual currency, but would have to identify their clients in the same way that other financial intermediaries do. It would also not be possible to allow video and online identification to accommodate the business model of online payment service providers. In the view of its proponents, this version of tech neutrality is necessary to avoid an unfair competitive advantage to new market entrants over the incumbent firms and to maintain a level playing field that is not distorted toward the technologically driven offerings.[87]

Both of these strategies will encounter difficulties due to the restricted scope of the adopted rules. For instance, the permission by California to issue alternative currencies is restricted to corporations organized under the law of that state.[88] Similarly, it would be difficult to enforce a state law requiring FinTechs to identify clients domiciled outside the territory of the state that has adopted it. Moreover, it would necessarily conflict with potential rules of other authorities given the transnational nature of FinTech services.

In sum, rather than eliminate the problem of global regulation and supervision of FinTechs, Tech Neutrality rules heighten it. The states that provide for technological neutrality can do so within their territory or for those providers over which they have enforcement powers, limiting the practical effects of these rules. At the same time, the divergence of national rules with regard to Tech Neutrality creates a problem for the global business model of FinTechs.

D. *Tech Specificity: BitLicense & Co.*

Some legislatures have imposed specific requirements that apply exclusively to FinTech providers. One of the most prominent is the New York State Department of Financial Services (NYSDFS), which introduced a "BitLicense" as early as August 2015.[89] Under these rules, any person that is engaged in a virtual business activity is required to obtain a license from the competent authority. The applicant must disclose various types of information, including its business structure, financial situation, profit model, website addresses, the jurisdictions it is engaging in, and the methodology used to calculate the value of virtual currencies.[90] Once the license is granted, the license holder is required

[86] Greenberg, *supra* note 85, at 1513 (stressing that technological neutrality seeks to promote greater fairness in the law's application by treating like things alike).

[87] Greenberg, *supra* note 85, at 1513.

[88] *See* CAL. CORP. CODE § 102(a) (Deering 2019) (defining the scope of application of the division as encompassing only corporations organized under California law).

[89] *See* N.Y. COMP. CODES R. & REGS. Tit. 23, § 200 (2019).

[90] *Id.* at § 200.4.

to comply with various obligations regarding its capital, such as the custody and protection of customer assets, risk and anti-money laundering assessment, and cyber security.[91] It must also inform the supervisory authority of any material change to its business, maintain books and records, file reports and financial disclosures, permit and assist examinations of itself and its affiliates, prepare a written business continuity and disaster recovery ("BCDR") plan, and keep advertising and market material for at least seven years.[92]

The success of this tech-specific license has been mixed. It has been reported that its introduction triggered an exodus of bitcoin firms from New York City.[93] Nevertheless, the regulation cannot be so easily avoided, as it also applies to out-of-state firms: its scope covers any virtual currency business activity involving New York or a New York resident.[94] According to the letter of the law, any provider that executes bitcoin-related services to a New York resident requires a BitLicense. The chance of enforcing the license requirement against providers outside of the state of New York or the United States is an entirely different matter.

The phenomenon of BitLicenses is not restricted to New York. California, for instance, is mulling its own regulation.[95] Japan has adopted a special licensing scheme for virtual currency exchanges.[96] While this type of tech-specific legislative action responds to legitimate concerns, it also has damaging effects. If more states were to join this movement in the future, the result would be a duplication of potentially conflicting licensing and regulatory requirements for FinTech providers. This is hardly an environment in which they can grow.[97]

E. *Regulatory Sandbox*

Another way to accommodate the emergence of new services is the regulatory "sandbox." A sandbox is a lightly regulated experimental space in which FinTech startups they can test innovative business models on real customers. The sandbox is distinct from complete freedom from regulation: rules define a certain threshold below which the new technologies fall into a safe harbor. The method is used, for instance, in the United States where crowdfunding is exempt from securities regulation to the extent that the operator's annual transactions and the amount invested by investors do not exceed certain ceilings.[98] The

[91] *Id.* at §§ 200.8-9, 15-16.

[92] *Id.* at §§ 200.10-18.

[93] *See* Daniel Roberts, *Behind the "Exodus" of Bitcoin Startups from New York*, FORTUNE (Aug. 14, 2015), http://fortune.com/2015/08/14/bitcoin-startups-leave-new-york-bitlicense/.

[94] *See* N.Y. COMP. CODES R. & REGS. Tit. 23, § 200.2(q).

[95] State Assemb. 1489, 2019-20 Reg. Sess. (Cal. 2019).

[96] Yuri Suzuki & Ryosuke Oue, *FinTech Legislation in Japan*, (2016/17) GLOBAL BANKING FIN. POL'Y REV. 1, 2.

[97] *See infra* III.B for the consequences of legal fragmentation for FinTech businesses.

[98] *See* Jumpstart Our Business Startups (JOBS) Act, Pub. L. No. 112-106, § 302, 126 Stat. 306, 315-33 (2012) (codified as amended at 15 U.S.C. § 77) (amending the Securities Act, 15

British Financial Conduct Authority (FCA) introduced a regulatory sandbox in 2016 as Part of the wider "Project Innovate."[99] In 2019, Switzerland introduced its own sandbox.[100] Other countries are working on similar concepts.[101]

These initiatives are wise self-restraints to prevent suffocating an emerging FinTech sector. But they generally come with a catch. Not only do FinTech firms need to respect the thresholds imposed, but they must also comply with the conditionality that comes with the sandbox. For instance, the US rules oblige the crowdfunding operator to register with the US Securities and Exchange Commission (SEC) as a broker or funding portal.[102] This has a number of consequences. For instance, the operator must disclose information, obtain from investors an affirmation that they fully understand the total loss risk.[103] Also, its officers, directors and major shareholders are subject to background checks.[104] All of this must be done, of course, under US law. The conditions and obligations imposed by another legal system may be quite different.

Some jurisdictions renounce the vetting of companies and projects for their innovativeness. An example of this approach is the Australian legislation, where the privilege is granted as a matter of law without the supervisor engaging with the start-up firm.[105] There is also no knowledge exchange between the supervisor and the entity.[106] The Australian regimen is therefore not a testing ground for new technologies but a traditional class waiver cloaked as a sandbox.[107] The companies that make use of them can neither be controlled nor restricted, so it is unclear whether they bring any innovation.

U.S.C. § 77 (1933)). The JOBS Act exempts issuers if (1) the amount sold to all investors during the 12-month period preceding the date of such transaction is not more than US $1 million; and (2) that the amount sold to each individual investor in the same period does not exceed US $2,000, or 5% of its annual income for investors with a net worth of less than US $100,000, and 10% of the annual income but not exceeding $100,000 for all other investors.

[99] *See* FCA INNOVATE, https://www.fca.org.uk/firms/fca-innovate (last visited Sept. 10, 2019).

[100] *See* Press Release, The Federal Council, Federal Council adopts implementing provisions for FinTech authorisation (Nov. 30, 2011) https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-73186.html (last visited Sept. 10, 2019).

[101] For a comprehensive overview of sandbox initiatives, *see* Dirk A. Zetzsche et al., *From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance* 27-29 (European Banking Institute, Working Paper No. 6, 2017), https://papers.ssrn.com/abstract=2959925.

[102] *See* Jumpstart Our Business Startups (JOBS) Act, *supra* note 98.

[103] *See id.*

[104] *See id.*

[105] *See* Dirk Zetzsche, Ross Buckley, Janos N. Barberis & Douglas Arner, *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 FORDHAM J. CORP. & FIN. L. 31, 83 (2017).

[106] *Id.*

[107] *Id.*

Despite the fact that regulatory sandboxes are mushrooming, so far they have only been used sparingly.[108] One reason for this is that a successful FinTech company quickly outgrows the limits set by legislation.[109] Furthermore, the use of the regulatory framework is typically restricted to customers residing in the regulator's jurisdiction, which renders the sandbox "unfit for cross-border provision of services."[110] The crux of FinTech services is that they operate transnationally due to their market integrating force.[111] Therefore, testing will not be close to reality when it is limited to residents of a certain country. On the other hand, if a legislature or regulator chose to extend the sandbox to customers who reside in another state's jurisdiction, there could be grave consequences in terms of regulatory arbitrage and competition.[112]

F. *Outright Prohibitions*

The most radical approach to the new technologies is to prohibit them. While this is rare with regard to most FinTech services, virtual currencies, particularly Bitcoin, are frequently the target of special prohibitions. [113] A comparative overview shows that a number of jurisdictions either do not consider Bitcoin to be legal tender or outlaw its use altogether.[114] So far, outright prohibitions have been restricted to a limited number of jurisdictions, such as Bolivia or Ecuador.[115] However, the crackdown by China on bitcoin exchanges has added considerable force to this approach.[116] Although China's crackdown has caused the value of the virtual currency to plunge,[117] its ultimate success is still uncertain as long as bitcoin can be traded via exchanges in other countries.

III. THE JURISDICTIONAL CONUNDRUM

The wide variety of approaches to regulation unmasks a deeper problem: they all involve the involvement of a national or local legislature or regulator

[108] *Id.* at 90 (stating that the data available suggest that "so far sandboxes have been used by very few firms.").

[109] *Id.* at 83.

[110] *Id.* at 80.

[111] See *supra* I.B.

[112] See *infra* III.B.

[113] Usman W. Chohan, Assessing the Differences in Bitcoin & Other Cryptocurrency Legality Across National Jurisdictions 6-8, (Sept. 24, 2017) (unpublished manuscript), (on file at https://papers.ssrn.com/abstract=3042248) (last visited Sept. 10, 2019).

[114] *See id*.

[115] *Id.*

[116] *Id.*; *see* Cao Li, *China Bitcoin Exchange to Stop Trading Virtual Currencies Amid Crackdown* N.Y. TIMES, Sept. 14, 2017, https://www.nytimes.com/2017/09/14/business/china-bitcoin-exchange.html.

[117] John Detrixhe, *Bitcoin Drops as China Renews Crackdown on Cryptocurrency*, QUARTZ (Jan. 16, 2018), https://qz.com/1180326/bitcoin-btc-price-drops-on-chinas-cryptocurrency-crackdown/ (last visited 30 October 2019).

(ignoring the regulation free- and self-regulatory methods). Given the limited scope of their competence, a jurisdictional problem surfaces: Who should regulate the global market for Fintech services? This problem has different dimensions: a legal, an economic, and a public choice dimension.

A. *Public International Law: Who May Regulate FinTech?*

From a legal point of view, one may ask: Who is allowed to regulate FinTech? This answer falls into the domain of public international law, which determines the outer limits of the of each state's jurisdictional sphere. The Permanent Court of International Justice (PCIJ) has advocated a very liberal standard in this respect: according to its famous decision in the *Lotus* case, states have jurisdiction to prescribe all behavior that affects them.[118] Importantly, the *Lotus* court did not recognize the principle of territoriality as a limit to the jurisdiction of states. It accepted the prohibition of a state's exercise of power in the territory of another state as a matter of customary international law but also accepted that states legislate or take administrative or criminal action with regard to events that occur outside of their territory.[119] This has led to the distinction between the "jurisdiction to prescribe" and the "jurisdiction to enforce" that is drawn by the US Restatement (Third) on Foreign Relations: while the latter is territorially limited, the former is not.[120]

Applying this standard to FinTech leads to perplexing conclusions. As discussed above, one of the characteristic features of FinTech is its ubiquity, for example, its global availability.[121] This implies that it affects a number of different countries around the world simultaneously. Under public international law, as interpreted by the PCIJ in the *Lotus* case, each state that is affected has the right to regulate FinTech because customary international law does not curtail a state's sovereign power in this respect.[122] This means that a multiplicity of service providers has legislative power to regulate the new services.

A crucial point to realize is that the state's interest to regulate does not depend on the location of the FinTech provider. The fact that a platform is operated in another country does not in any way diminish the perceived need for regulation. From the viewpoint of public international law, it does not matter, for instance, whether a service provider that betrays its investors or consumers is established within or outside a state's territory. A national legislature or regulator has the right to avoid the spill-over of systemic risk from abroad and to stop money

[118] The Case of the S.S. "Lotus" (Fr. V. Turk.), Judgement, 1927 P.C.I.J. (ser. A) No. 9, at 18 (Sept. 7) ("the first and foremost restriction imposed upon a state by international law is that – failing the existence of a permissive rule to the contrary – it may not exercise its power in any form in the territory of another state").

[119] *Id.* at 20.

[120] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW OF THE UNITED STATES §§ 402, 431 (AM. LAW. INST. 1987).

[121] See *supra* I.C.

[122] The Case of the S.S. "Lotus," 1927 P.C.I.J. (ser. A) No. 9, at 17.

laundering and the sponsoring of terrorism there.[123] This necessarily requires states to apply their law extraterritorially.[124] Indeed, most of them have hardly any other choice given that the vast majority of providers are established in other states. "Extraterritoriality" is not a bad word in financial law generally.[125] With regard to FinTech, it is even a necessity given the effects of ubiquity, disintermediation and concentration.

One could try to limit the regulatory scope to the extent to which a particular country is affected by FinTech. However, it is extremely difficult to measure the degree to which a country is affected in quantitative terms. To illustrate, a state's right to regulate a FinTech provider may be very loosely approximated by the number of clients living in its territory. The state may also want to act to prevent systemic risk, for example, the spill-over of a big operator's insolvency to its firms.[126] Such impact cannot be defined by the number of transactions with domestic firms alone, because it also depends on the quality and intensity of these connections and the risk mitigations that have been taken.[127] Other regulatory interests are also impossible to measure quantitatively: the extent to which a community is affected by money laundering or the sponsoring of terrorism can hardly be assessed in terms of exact monetary value because they concern invaluable interests, namely the prevention of crime and the protection of the life and health of its citizens.

Thus, the outcome of the legal analysis is that more than one state has the right to regulate the same FinTech provider and that a state's regulatory clout can hardly be limited by the degree to which it is affected. The consequence is a multiplication of applicable state regulation. This may be quite cumbersome for the industry. The same firm or product will have to comply, for instance, with

[123] *See* Pflaum & Hateley *supra* note 11, at 1207-08.

[124] *Id.* at 1207 (noting that the extent of the extraterritorial reach of US criminal law with regard to virtual currencies is vast); Matthias Lehmann, *Legal Fragmentation, Extraterritoriality and Uncertainty in Global Financial Regulation*, 37 OXFORD J. LEGAL STUD. 406, 419 (2017) (explaining the rise of extraterritorial laws by the uncertain quality of financial regulation and supervision by other states).

[125] The factors that make extraterritorial financial regulation particularly efficient have often been highlighted in the literature, see, for example, Chris Brummer, *Territoriality as a Regulatory Technique: Notes from the Financial Crisis* 79 U. CIN. L. REV. 499, 506-508 (2010) (describing the advantages of 'direct' extraterritoriality); John C. Coffee, *Extraterritorial Financial Regulation: Why E.T. Can't Come Home* CORNELL L. REV. 1259, 1260-1261 (2014) (citing, inter alia, the high mobility of financial firms and the need to prevent systemic risk as reasons for extraterritorial regulation).

[126] On FinTech providers as potential sources of systemic risk see Skinner, *supra* note 62.

[127] On the various channels in which systemic risk can spread, see Olivier De Bandt and Philipp Hartmann, *Systemic Risk: A Survey* 18 (European Cent. Bank, Working Paper No. 35, 2000), https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp035.pdf (last visited Nov. 23, 2019) (distinguishing between the exposure channel and the information channel).

licensing rules of different countries.[128] Very often, these requirements are not limited to the conduct of business, which could theoretically be satisfied by adapting its operation to the customer's specific location, even if this entails higher costs. Instead, they encompass aspects of organization and governance, such as asset segregation or capital requirements, which concern the provider itself.[129] When these rules contradict each other, the operator will be unable to comply with them simultaneously.

B. *Economic Analysis: Who Should Regulate FinTech?*

The starting point of an economic analysis of this jurisdictional conundrum is the principle that each state should be able to regulate FinTech to the extent it impacts the individual state's interests, as defined by its domestic policies. A distribution of jurisdiction is not ideal and will prove to be unstable when it fails to accord an appropriate measure of authority to these preferences.[130] The interests that a legislature may protect are public and private. Typically, one may surmise that they will encompass the following: a reasonable amount of protection for investors and consumers, the prevention of systemic risk caused by the failure of a FinTech firm, the fight against money-laundering, and terrorism financing and tax evasion via anonymous electronic platforms. The precise shape and form of these interests varies from country to country, depending on the policy set by each legislature.

Duplicative regulation and legal fragmentation are as such nothing unusual today.[131] To the contrary, they are a dominant feature of modern financial law. For example, banks operating or investment funds that offer their products in multiple jurisdictions are all too familiar with multiple and divergent regulatory standards. They cause additional compliance costs, which in some cases may be tremendous.[132]

Yet the case of FinTech is distinguishable because the sector suffers incomparably more from regulatory duplication and legal fragmentation than any other Part of finance. This is because the FinTech business model is built on economies of scale and network effects.[133] Services are provided in a concentrated way via a single unit, often rendered through only a server. The use

[128] *See* Pflaum & Hateley, *supra* note 11, at 1172 (criticizing the international regulatory landscape for virtual currencies such as bitcoin as an inconsistent and incomplete patchwork).

[129] *See* discussion of the New York BitLicense, *supra* II.D.

[130] Joel P. Trachtman, *Economic Analysis of Prescriptive Jurisdiction* 42 VA. J. INT'L L. 1, 35 (2001).

[131] *See* Pflaum & Hateley, *supra* note 11, at 1202-08.

[132] Compliance costs may be so high as to completely erase the profits that can be made in a certain country. For this reason, financial firms sometimes withdraw from certain markets. *See, e.g.,* Patrick Jenkins & Martin Arnold, *HSBC Speeds Up Exit from Emerging Markets*, FIN. TIMES (Apr. 17, 2015), https://www.ft.com/content/85642fcc-e50d-11e4-bb4b-00144feab7de.

[133] *Supra* notes 35–36 and accompanying text.

of technology for the processing of immense data allows for cost savings which are passed on to investors and consumers in the form of lower prices for services. The offering of the same service all over the world makes for FinTech's availability and ubiquity. This business model can be greatly disturbed and even rendered obsolete by the necessity to obey different rules in different countries.[134] Though it is true that duplicative and divergent rules can be accommodated by setting up different software and data processing for different countries,[135] this necessarily comes at a cost. This cost may outweigh the economies of scale which provide the business rationale for FinTech. Even worse is a legally fragmented landscape. In this situation, a separate service has to be set up for each country in question. This may completely annihilate the benefits of introducing new technology.

To make the most of technology, duplicate and diverging standards should be avoided to the fullest extent possible. Consumers will not benefit, or not benefit to the full extent, where these technologies are submitted to idiosyncratic rules.[136] To be sure, it is very worthwhile to pursue regulatory goals, such as the protection of investors or consumers and investors through information duties or capital requirements for the operator. The problem is not regulation as such but its divergence. Duplicative and contradicting standards hurt the business model of FinTech to the extent that they may wipe out its benefits completely. Regulatory divergence and legal fragmentation may therefore prove to be the primary obstacles to technological innovation.[137] Investors and consumers will be deprived of potential efficiency gains and increased competition. In developing states, they may stand to lose their only chance of gaining access to financial services altogether.[138] It is therefore possible that the disadvantages of regulatory divergence exceed the benefits of regulation. The division of regulatory power between states has not kept pace with the emergence of global technologies and services. A jurisdictional setup must be created where the goals of national regulation can be effectively pursued without sacrificing the benefits of innovation.

[134] Jenkins & Arnold, *supra* note 132.

[135] *See, e.g.*, Trautman, *supra* note 20, at 274 (stating that PayPal has localized marketing websites in more than 80 markets).

[136] *See* Pflaum & Hateley, *supra* note 11, at 1205-08.

[137] Eddy Wymeersch, *Third-Country Equivalence and Access to the EU Financial Markets Including in Case of Brexit*, 4 J. FIN. REG. 209, 221-231 (2018).

[138] Douglas W. Arner et al., *supra* note 1, at 15 (stating that there are 1.2 billion "unbanked" individuals in developing countries that would be willing to rely on unregulated institutions to provide them with financial services).

IV. GLOBALLY UNIFORM MINIMUM RULES TO PRESERVE PUBLIC INTERESTS

A. *The Danger of Legal Fragmentation*

It follows from the foregoing considerations that state regulation should not be completely eliminated and should continue to play an important role for the FinTech sector. This is problematic insofar as the market in which these firms operate and the perimeter of the jurisdiction of states are not identical. If all states legislate on FinTech, there is a real danger of a regulatory overkill due to legal fragmentation. This danger is already becoming a reality with the different sandboxes, BitLicenses and prohibitions outlined above.

From a global welfare point of view, a fragmented legal landscape for FinTech is not a good result. It has already been shown that the costs to comply with different regulatory regimes have the potential to deprive new financial techniques of all interest and to stifle innovation.[139] A global solution is therefore preferred over individual regulation by nation-states. Uniform state rules have many advantages: they lower regulatory compliance, information, and transaction costs; they facilitate the development of a repository of interpreting precedents; they avoid the need to determine the applicable law; and they protect against idiosyncratic changes in the law and a deleterious race for the lowest regulatory standard that ultimately creates externalities for people living outside the enacting state.[140] Globally uniform rules are the most suitable to govern a global service like FinTech.

B. *Inefficient Regulatory Competition*

There are, however, counter-arguments to worldwide legal uniformity. The strongest is regulatory competition. Many authors stress the benefits that would accrue from diverse state regulation.[141] They argue that competing regulatory standards would allow legislatures to continually test and adapt different standards and rules. Because the ideal form of regulation is unknown, this trial and error or "muddling through" process would have decisive advantages over a top-down, harmonized approach.[142]

The theory of competition between legislatures is valuable in many contexts, especially in finance, because the right regulatory approach is uncertain. Nevertheless, it does not apply in its full breadth to FinTech. There may be

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[139] *See supra* I.A.

[140] Larry E. Ribstein & Bruce H. Kobayashi, *An Economic Analysis of Uniform State Laws* 25 J. LEGAL STUD. 131, 138–40 (1996).

[141] *See, e.g.*, Ribstein & Kobayashi, *supra* note 140, at 135; Roberta Romano, *For Diversity in the International Regulation of Financial Institutions: Critiquing and Recalibrating the Basel Architecture* 31 YALE J. REG. 1, 44 (2014) [hereinafter Romano, *Basel*]; Roberta Romano, *The Need for Competition in International Securities Regulation* 2 THEORETICAL INQ. L. 387, 392-97 (2001).

[142] Romano, *Basel*, *supra* note 141, at 24 (criticizing the Basel Accords).

benefits of trying out different rules on the national or even sub-national level, yet they will be completely outweighed by the damage that is done to the business model of these operators. In fact, there is a danger that regulatory competition and diversity might nip many of these technologies in the bud.[143]

In addition, it is hard to see how regulatory competition could bring substantial welfare benefits to FinTech. It is unlikely that states would find original legislative or other solutions with enough advantages to compensate for the cost of legal fragmentation. The safeguards may be formulated differently, but they would functionally serve the same purposes, for example, to overcome information asymmetries and externalities such as the abuse of FinTech for money-laundering or sponsoring of terrorism. Their incompatibility would create a deadweight loss to society. The situation can be compared to other instances in which divergent national approaches have failed to yield any palpable benefit over a uniform global solution. Take the everyday example of power plugs and sockets. They differ from country to country but essentially serve the same purpose of providing electricity in a safe way. Although it is not very likely, it may be possible for an engineer to prove that one type of plug and corresponding socket is a bit superior to another in terms of safety, size or weight. Yet this superiority is unlikely to compensate for the enormous cost of adapters that are carried by travelers each day. Regulatory competition has therefore produced inefficient diversity. It would have been much better had the national legislatures agreed on a uniform plug and socket from the start.

C. *The Subsidiarity Argument Does Not Bite*

Another argument that could be advanced against uniformity is the principle of subsidiarity.[144] Subsidiarity is a principle of good governance in multi-level systems. In choosing the level on which a certain regulatory task is to be fulfilled, it requires the lowest level at which the action can possibly be

[143] *Id.* at 42-43.

[144] The principle of subsidiary has been longstanding in organizational theory and received special prominence in EU legislation. The origins of the principle are extensively discussed, see, for example, WOLFRAM MOERSCH, LEISTUNGSFÄHIGKEIT UND GRENZEN DES SUBSIDIARITÄTSPRINZIPS 25-39 (Duncker & Humblot, 2001); PHILIPPE BRAULT, GUILLAUME RENAUDINEAU & FRANÇOIS SICARD, LE PRINCIPE DE SUBSIDIARITÉ 9-23 (La documentation Française, 2005); Peter-Christian Müller-Graff, *Subsidiarity as a Legal Principle*, EUR. UNION REV. 75, 76-82, 85 (2014); Robert Schütze, *Subsidiarity After Lisbon: Reinforcing the Safeguards of Federalism?*, 68 CAMBRIDGE L.J. 525, 525-27 (2009); Vlad Constantinesco, *Who is Afraid of Subsidiarity?*, 11 Y.B. EUR. L. 33, 33-38 (1991); PAOLO DURET, SUSSIDIARIETÀ E AUTOAMMINISTRAZIONE DEI PRIVATI 1-30 (CEDAM, Padova, 2004). Besides the Papal Encyclica *Quadragesimo Anno* of 1931, names of authors ranging from Aristoteles to Althusius are mentioned. *See generally* PAPAL ENCYCLICA QUADRAGESIMO ANNO (1931). It is featured in the Treaty on the Functioning of the European Union. Consolidated Version of the Treaty on the Functioning of the European Union, art 5(3), Dec. 17, 2007, 2007 59 O.J. (C 202).

achieved.[145] Subsidiarity responds to the fact that local conditions, customs, and manners are not identical. It protects against too much centralization and the legislature being out of touch with the reality that it regulates. Obviously, from this vantage point, worldwide regulation must be viewed with suspicion. There is a reasonable fear that global rules will not be sufficiently adapted to local conditions.

These are valid concerns. However, one must not forget that FinTech is global in nature. Hence, there are very few local divergences with regard to its use. The way in which PayPal functions in Nigeria or Switzerland, is exactly the same.[146] Indeed, one of the peculiar features of FinTech is precisely that it is completely delocalized.[147] It therefore makes much more sense to regulate it on the global level. Moreover, FinTech is a very new phenomenon. Therefore, it can not have acquired different social uses, and it is unlikely that different customs and practices that resist global rules have had the chance to develop. Of course, differences in the regulatory environment play a role. For example, the threshold of investment below which FinTech customers do not enjoy the ordinary protection of securities law should not be the same, but should depend on the income level of the country in question.[148] But these can be set differently from state to state without putting the economic advantages of FinTech in danger.[149]

D. *The "Financial Stability and Innovation Board"*

A uniform global approach therefore is the most efficient strategy. A challenging question is how such global regulation should come about. The most obvious answer, a treaty, would not work. Finance is a fast-evolving area. It would not be possible to react to new developments by convening a diplomatic conference for each necessary amendment.[150] Moreover, it is unlikely that states would allow a global regulator in such an important area.

The more promising route is therefore to use global soft law rules. There are different bodies that could draft them. To begin, one could first think about technical standard setters, such as the International Organization for Standardization (ISO). One advantage is that they are less politicized than other bodies, however, they generally lack the political clout and the expert knowledge necessary for financial regulation.[151] One institution that certainly has both

[145] Treaty on the Functioning of the European Union, *supra* note 144.

[146] On the global business model of PayPal, *supra* notes 28 and 30and accompanying text.

[147] *See supra* note 18, at 320.

[148] *See supra* III.B.

[149] *See infra* IV.E.

[150] On the disadvantages of binding treaties in the area of finance, see Chris Brummer, *Why Soft Law Dominates International Finance - and Not Trade*, 13(3) J. INT'L ECON. L. 623, 636-637 (2010) (citing inter alia different policy preferences and asymmetric benefits for individual countries).

[151] Walter Mattli and Tim Buthe, *Setting International Standards: Technological Rationality or Primacy of Power*, 56 WORLD POL. 1, 13 (2003) (describing the authority of

political clout and financial expertise is the Financial Stability Board (FSB).[152] So far, its mandate is limited to safeguarding global financial stability.[153] Yet there is no inherent reason why the FSB should only be charged with the downside risks and be precluded from contributing to the positive development of financial markets. Specifically, it should play a larger role when an innovation, such as FinTech, can only be effectively administered though global rules. A more appropriate name to reflect this change in mandate could be the "Financial Stability and Innovation Board."

The suggestion made here would extend the FSB's tasks and give it worldwide powers in many areas, although strictly limited to situations that cannot be more effectively cared for on the national level. It therefore comes close to the proposals for a global financial regulator that have been made frequently in the past.[154] So far, these proposals have fallen on deaf ears, mainly because of nation-states' concerns with protecting domestic sovereignty.[155] Yet if there is an area where a global regulator is needed, it is FinTech. Since it transcends state borders, it calls for uniform global regulation. The FSB is ideally placed to frame such rules. Its members, delegates of finance ministries and central banks, bring together the necessary expertise and the political clout to adopt common rules. Moreover, all countries with major FinTech firms are represented at the FSB. This enhances the chance of acceptance and transposition of their resolutions. Depending on the product or service, the guidelines adopted by the FSB could be specified in more detail by sector-specific standard-setters, such as the Basel Committee for Banking Supervision

private sector standardisation bodies such as ISO as 'technical expertise' that applies to technical matters).

[152] *About the FSB*, FINANCIAL STABILITY BOARD, https://www.fsb.org/about/ (last visited Oct. 19, 2019).

[153] *Id.*

[154] *See, e.g.*, Singh & Brummer, *supra* note 54 (position of Tajinder Singh); Andrew F. Cooper, *Consolidated Institutional Cooperation And/or Competitive Fragmentation in the Aftermath of the Financial Crisis*, 12 Whitehead J. Dipl. Int'l Rel. 12, 13, 15, 23 (2011) (calling for the enhancement of the G20 to a steering committee with comprehensive rule-making powers); Eric J. Pan, *Challenge of International Cooperation and Institutional Design in Financial Supervision: Beyond Transgovernmental Networks* 11 CHI. J. INT'L L. 243, 273 (2010) (stressing the need for an independent international administrative agency); Regis Bismuth, *The Independence of Domestic Financial Regulators: An Underestimated Structural Issue in International Financial Governance*, 2(1) GOETTINGEN J. INT'L L. 93, 108 (suggesting a world financial organization).

[155] Ross P. Buckley and Douglas W. Arner, *From Crisis to Crisis: The Global Financial System and Regulatory Failure* 14 INT'L BANKING FIN. L. SERIES 298, 299 (2011).

(BCBS),[156] the International Organization of Securities Commissions (IOSCO),[157] or the International Association of Insurance Supervisors (IAIS).[158]

E. *Remaining Role for Locally Adapted Rules*

In spite of the need for uniformity, the global rules should also leave room for some national law. This is necessary when there is a variation in circumstances between countries that requires specific rules. One such area is related to the conditions of access to FinTech services. Given the differences in income and wealth of their residents, the maximum amount that can be invested should be set differently in wealthy states versus impoverished states. This threshold is therefore best fixed at the national level, which will permit each country's specific circumstances to be considered.

The result is that the conditions for using FinTech will differ across the globe. Yet these divergent rules would not greatly disturb the business model of these services given that they relate only to the access to and not the content of the services. Once accessed, these services would be allowed to function in exactly the same way, creating huge economies of scale. While the conditions for access may be different from country to country, it is important that the rules concerning the service itself remain uniform.

V. COMPETITION OF SUPERVISORS

A. *Decentralized Supervision*

Global law is rarely uniformly applied and enforced around the world: even when an area of the law is harmonized by uniform rules, differences persist at the national level.[159] The reason for this is that application and enforcement are still in the hands of the states as the ultimate holders of sovereign power.[160] This is also true in finance. There is no worldwide financial authority with jurisdiction to supervise private firms. It is highly unlikely that such an entity will be created

[156] *The Basel Committee: An Overview*, BANK FOR INTERNATIONAL SETTLEMENTS, https://www.bis.org/bcbs/ (last visited Oct. 19, 2019).

[157] *About IOSCO*, INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS, https://www.iosco.org/about/?subsection=key_regulatory_standards (last visited Oct. 19, 2019).

[158] *About the IAIS*, INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS, https://www.iaisweb.org/page/about-the-iais (last visited Oct. 19, 2019).

[159] For an example of the different interpretations of the Convention on the International Sale of Goods (CISG), see Harry M. Flechtner, *The Several Texts of the CISG in a Decentralized System – Observations on Translations, Reservations and other Challenges to the Uniformity Principle in Article 7(1)*, 17 J. L. AND COM. 187, 187-217 (1998); John Honnold, *The Sales Convention in Action – Uniform International Words: Uniform Application?*, 8 J. L. AND COM. 207, 207-212 (1988).

[160] See generally from the perspective of international law Jose E Alvarez, *The Return of the State*, MINN. J. INT'L L. 223 (2011).

any time soon. Setting it up would be a monumental task of deciding over its powers, location, staff, and organizational structure, and would also require states to give up sovereignty in financial matters, which they guard jealously.[161] For the foreseeable future, supervision will therefore continue to be split between national authorities.

The differences in supervision imply differences in the enforcement of regulation. Because of the inherent ambiguity of any text, uniform rules can be understood in several ways.[162] Financial authorities will therefore interpret them differently. Even when this is not the case, there will be divergences in the procedure of enforcement. Supervisory practices are never the same when different organizations are in charge. There are numerous customs, habits, and "ways to do things" that are idiosyncratic to each national supervisor. These deviations are inevitable as long as there is more than one supervisor. These deviations may reduce the efficiency of uniform regulation. This was realized by the European Union during the financial crisis, when the EU reacted by transferring the supervision over systemically important banks in the Eurozone to the European Central Bank (ECB).[163] It is, however, difficult to imagine a similar development for the whole world. Therefore, the quality of supervision will vary.

The question is how the dissimilarities in supervision shall be dealt with from an organizational viewpoint. What is the best setup to avoid negative repercussions to FinTech? In answering this question, a number of interests should be considered. There are the needs of the customers in being efficiently protected. There is the FinTech providers' concern of achieving economies of scale and not being subjected to different regimes. And there is legislature's interest in the effective safeguarding of public interest, for example, against money laundering or sponsoring of terrorism. The difficulty is to find a supervisory setup that balances these interests and achieves maximum welfare.

B. *Traditional Designs for Models of Shared Supervision*

For inspiration, one may look at ways in which the sharing of supervisory tasks has traditionally been organized between different nations. There are an array of ways to divide labor among various regulators with regard to financial services. These models have developed over time and are sometimes peculiar to

[161] *See* Singh & Brummer, *supra* note 54, at 19-20 (position of Chris Brummer).

[162] This is a basic insight of philosophical hermeneutics, see, for example, HANS-GEORG GADAMER, TRUTH AND METHOD 164-69 (J. Wensheimer & D.G.Marshall trans., Crossroad 1975). On Ronald Dworkin's theory of law as a concept that is open to different interpretations, see NICOS STAVROPOULOS, *Legal Interpretivism*, in: STANFORD ENCYCLOPEDIA OF PHILOSOPHY (2014).

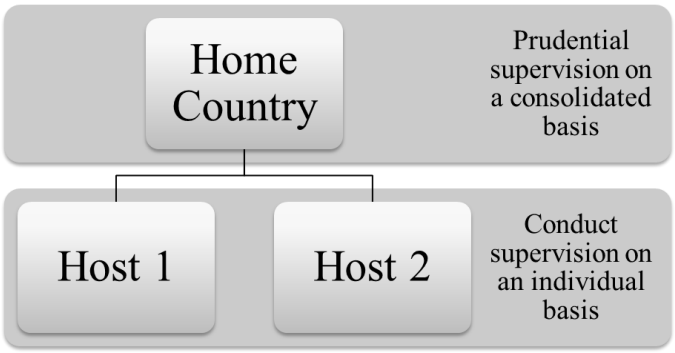
[163] Council Regulation 1024/2013, 2013 O.J. (L 287) 9, 11, 13 (EU) (conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions).

a certain sector or a specific region of the world. The goal is to find out which of them is appropriate to FinTech.

1. Joint Supervision (Basel Concordat Model)

Perhaps the oldest way of organizing jurisdiction over cross-border financial firms is under the so-called Concordat that was prepared by the Basel Committee on Banking Supervision (BCBS), a unit of the Bank for International Settlement (BIS).[164] Under this system, the fulfilment of solvency and liquidity requirements for a bank or bank group on a consolidated basis is controlled by the supervisory authorities of the home country.[165] The supervisor of the host country in which the bank or bank group is active controls all other aspects, in particular the control of its conduct with regard to its customers. In a scheme, this joint supervision looks like the following:

Figure 1. Joint Supervision under the Basel Concordate Model.



[164] Basel Committee on Banking Supervision (BCBS), *Consolidated Supervision of Banks' International Activities*, https://www.bis.org/publ/bcbsc112.pdf (last visited Sept. 15, 2019) [hereinafter *Consolidated Supervision*]; BCBS, *Principles for the Supervision of Banks' Foreign Establishments*, http://www.bis.org/publ/bcbsc312.pdf (last visited Sept. 15, 2019). The Concordat is a reaction to the internationalization of banking with banks operating branches, subsidiaries and joint ventures in a number of countries. Various incidents such as the demise of Banco Ambrosio or the BCCI scandal, show the inadequacy of national supervision. The Concordat, the first version of which was adopted as early as 1979, responds by suggesting a functional division between the home country in which the bank or holding company is established from the host countries in which the bank or holding is active via branches, subsidiaries or joint ventures with other firms. On the genesis of the Concordat, see CHARLES GOODHART, THE BASEL COMMITTEE ON BANKING SUPERVISION 96–126 (Cambrige Univ. Press, 2011); Richard J. Herring, *International Coordination of Financial Supervision: Why Has It Grown? Will It Be Sustained?*, 10 J. FIN. ECON. POL'Y 213-236 (2018).

[165] BCBS, *Consolidated Supervision*, *supra* note 164, at 4 (explaining that the principle of consolidated supervision is that the supervisory authorities responsible for the parent bank monitor the risk exposure as well as the adequacy of their capital on the basis of the totality of their business wherever conducted).

Would the same or similar allocation of responsibilities between home and host countries also work for FinTech? Certainly not. This is because FinTech providers do not operate via a branch, subsidiary, or joint venture in a host country. Instead, they offer their services directly from their home country to customers abroad.[166] This makes it hard to attribute their "conduct" to the territory of a particular host country.

That is not to say that it would be impossible for a state to exercise supervision on internet offers by a firm established in another country. The state's financial authority could control websites and threaten to shut them down in the event of non-compliance with its rules and orders. Yet crucially, it would be impossible to impose rules *only for its territory* because the conduct of the FinTech firm is addressed to the entire world. Any order by a national supervisor imposing a change of behavior on the firm would therefore have a practical effect on other countries as well. A national regulation of global offerings thus has significant externalities from the point of view of the rest of the world.

Of course, a national authority could compel the FinTech provider to create a localized website and control the customer access via geo-localization services.[167] But, as explained before, such "re-localization" or "nationalization" of FinTech is suboptimal from a global viewpoint and may even destroy the FinTech business model.[168] Joint supervision in the form of the Basel Concordat is therefore not an option for FinTech.

2. Passporting (European Union Model)

Another way to allocate supervisory responsibility is via the recognition of acts adopted by other financial authorities. Such recognition comes in many different forms. The most elaborate is the passport system.[169] Under this system, a securities firm that has been authorized by one jurisdiction can offer its services in any other participating country without the need for an additional license. The scheme looks as follows:

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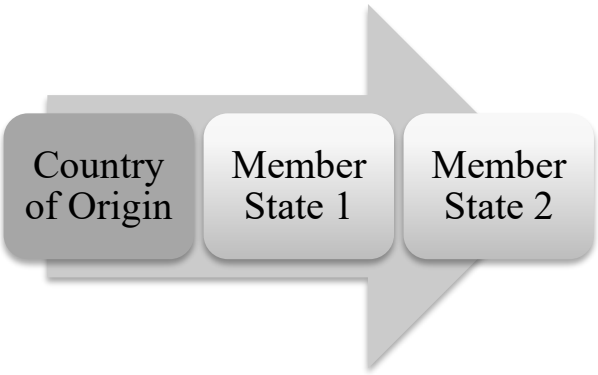
[166] See *supra* note 20, at 302 and text accompanying note 34.

[167] On the technique of geolocalization, see, for example, Fabricio B. P. Polido, *How Far Can Private International Law Interact with Intellectual Property Rights - A Dialogue with Benedetta Ubertazzi's Book Exclusive Jurisdiction in Intellectual Property Law*, 9:1 J. PRIV. INT'L L. 171, 176-177 (2013) (indicating that geolocalization may be a means to limit the territorial impact of court decisions in IP cases).

[168] *See supra* I.B.

[169] Douglas W. Arner, *Globalization of Financial Markets: An International Passport for Securities Offerings* 6 STUD. INT'L FIN. ECON. TECH. L. 51, 66 (2003); Eva Z. Lomnicka, *The Single European Passport in Financial Services*, , *in* DEVELOPMENTS IN EUROPEAN COMPANY LAW 181-200 (Barry A.K. Rider & Mads Andenas eds., 1997); Roberta S. Karmel, *The EU Challenge to the SEC*, 31 FORDHAM INT'L L. J. 1692, 1692 (2007); *see also* IOSCO TASK FORCE ON CROSS-BORDER REGULATION, FINAL REPORT 31–37, http://www.iosco.org/library/pubdocs/pdf/IOSCOPD507.pdf (last visited Dec. 19, 2015) [hereinafter IOSCO].

Figure 2. Mutual Recognition under a Passporting System Provider Licensed in Country of Origin can Exercise Activities in Other States.



Passporting can also apply to products: a prospectus authorized in one state may be used for securities offerings in others. This method of coordinating supervisory competences by passporting is pervasive in EU law.[170] The US and Canada employ it in their Multi-Jurisdictional Disclosure System.[171]

The Achilles' heel of passporting arrangements is that they invite regulatory competition. A country could consciously establish a particularly lax regime in order to attract more firms to its soil. Firms would be incited to engage in regulatory arbitrage: they would move to the place with the laxest regime.[172] The pressure of regulatory competition and arbitrage is very strong since the costs of relocation in finance are relatively low.[173] This is particularly true for FinTech, where it is often sufficient to simply transfer a server to another jurisdiction. With only a slightly more lenient regime, a state could become the financial hub for an entire region and externalize the costs to others.[174]

Passporting therefore requires mutual trust. Such trust can sometimes be politically imposed and coupled with minimum harmonization and common

[170] *See* IOSCO, supra note 169, at 33-35; *see also* J. DALHUISEN, DALHUISEN ON TRANSNATIONAL COMPARATIVE, 3 COMMERCIAL, FINANCIAL AND TRADE LAW 691 (Hart Publishing, 4th ed., 2010) (section 3.5.2).

[171] ROBERT T. STUART & MARK A. TRACHUK, *Canada*, INTERNATIONAL SECURITIES LAW AND REGULATION, CND 12-13 (Dennis Campbell ed., 2009); Karmel, *supra* note 169, at 1696.

[172] *See* Pflaum & Hateley, *supra* note 11, at 1196 (stressing that regulatory arbitrage will drive users of virtual currencies toward operating in states with the lowest regulatory burdens).

[173] Wolf-Georg Ringe, *Regulatory Competition in Global Financial Markets – The Case for a Special Resolution Regime*, 1 ANNALS CORP. GOVERNANCE 175, 178 (2016) (explaining the possibility to shift bookings between different bank entities).

[174] Pierre-Hugues Verdier, *Mutual Recognition in International Finance*, 52 HARV. INT'L L.J. 55, 79 (2011) (citing the case of Iceland in the EU).

institutions, such as in the EU.[175] In other cases, mutual trust is a more factual reality grounded in cultural similarities and economic links between certain countries, such as between the US and Canada, which has enabled them to enter into the Multi-Jurisdictional Disclosure System.[176] Similar favorable conditions do not exist in with other parts of the world.[177] It is hard to imagine that the US or the EU would passport a service provider if it came from a jurisdiction with less stringent securities, consumer, and banking laws than their own. Therefore, global passporting for FinTech firms or products is not a realistic option.

3. Unilateral Recognition (Substituted Compliance or Equivalence)

There is a method that is more promising than the global passporting system: a state may unilaterally exempt foreign service providers from the application of its rules on the basis that the foreign service provider is subject to a comparable regulation and supervision in its home country.[178] The standard of scrutiny for this assessment varies: it is called "substituted compliance" in the US and "equivalence" in the EU.[179] Yet the principle features of this method are the same: each supervisor examines the supervisory regimes of other states and assesses their quality.[180] If it finds it to be similar to its own, it will grant the

[175] *See, e.g.*, MJ Borgers, *Functions and Aims of Harmonisation after the Lisbon Treaty. A European Perspective*, *in* THE FUTURE OF POLICE AND JUDICIAL COOPERATION IN THE EUROPEAN UNION 347 (Cyrille Fijnaut & Jannemieke Ouwerkerk eds., 2010) (examining judicial cooperation in criminal matters between EU member states).

[176] SEC. EXCH. COMM'N, INTERNATIONALIZATION OF THE SECURITIES MARKETS: REPORT OF THE STAFF OF THE U.S. SECURITIES AND EXCHANGE COMMISSION TO THE SENATE COMMITTEE ON BANKING, HOUSING AND URBAN AFFAIRS AND THE HOUSE COMMITTEE ON ENERGY AND COMMERCE III-268–74 (1987) (describing the similarities between the Candadian and the US disclosure system).

[177] Merritt B. Fox, *The Political Economy of Statutory Reach: U.S. Disclosure Rules in a Globalizing Market for Securities*, MICH. L. REV. 696, 707 n.21 (1998) (describing that no other foreign jurisdiction has qualified for such special treatment in the years after the adoption of the Multi-Jurisdictional Disclosure System between the US and Canada).

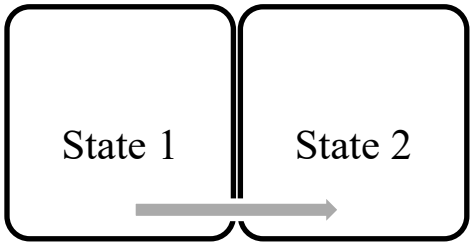
[178] For the U.S. see, for example, CFTC Interpretive Guidance and Policy Statement Regarding Compliance With Certain Swap Regulations, 78 Fed. Reg. 45292, 45344 (July 26, 2013) [hereinafter CFTC]; for the EU see, for example, Commission Regulation 600/2014 of May 15, 2014, Markets in Financial Instruments (MiFIR) – Regulation, 2014 O.J. (L 173) 84.

[179] On substituted compliance, see Howell E Jackson, *Substituted Compliance: The Emergence, Challenges, and Evolution of a New Regulatory Paradigm*, 1 J. FIN. REG. 169, 169 (2015); Alexey Artamonov, *Cross-Border Application of OTC Derivatives Rules: Revisiting the Substituted Compliance Approach* 1 J. FIN. REG. 206, 206 (2015); on equivalence *see* Dirk Zetzsche, *Competitiveness of Financial Centers in Light of Financial and Tax Law Equivalence Requirements* RECONCEPTUALISING GLOBAL FINANCE AND ITS REGULATION 394–403, at 396-97 (Ross P. Buckley, Emilio Avgouleas & Douglas Arner eds., 2016); Wymeersch, *supra* note 137, at 209-75.

[180] Alexey Artamonov, *Cross-Border Application of OTC Derivatives Rules: Revisiting the Substituted Compliance Approach*, 1 J. FIN. REG. 206, 212 (2015) (discussing the comparability determinations made by the CFTC).

firms from such comparable states access to its markets without requiring full compliance with its own rules.

Figure 3. Unilateral Recognition under Equivalence or Substituted Compliance Standard State 2 Allows Provider Licended in State 1 to Exercise Activities on its Terriroy.



Unilateral recognition is thus a form of regulatory recognition.[181] It differs from passport systems in several crucial respects: First, it is administered not by the home country but by the host country.[182] The latter will decide whether to allow the service provider into its territory. Second, there is no guarantee of reciprocity.[183] It is possible that only the firms of one country are permitted to access the market of another state, whereas the latter's firms are not granted with reciprocal recognition. Third, recognition may be withheld for improper reasons, such as on political grounds or to fend off unwelcome competitors.[184] Unilateral recognition therefore does not necessarily result in a level playing field in which firms from the participating countries may freely compete with each other. Fourth, unilateral recognition procedures are time consuming. [185] It can take years for a country's regime to be recognized by another, during which time the former's firms cannot access the latter's market.[186] Finally, unilateral recognition is cost intensive because each and every country has to monitor the quality of their foreign counterparts and vice versa.[187]

[181] Wymeersch, *supra* note 137, at 214 ('In principle, equivalence in EU financial regulations refers to the recognition that a third country's legal and regulatory system is based on the same principles as those applicable in the EU, leading to an equivalent level of protection of investors and to ensuring financial stability.').

[182] See *supra* note 176 for examples.

[183] *Id.*

[184] Philip Stafford, *Trading Costs Rise after Switzerland's Loss of EU Access Rights*, FINANCIAL TIMES, Sept. 24 2019, https://www.ft.com/content/1aa1561a-dea5-11e9-9743-db5a370481bc (last viewed Nov. 4 2019) (explaining that Brussels let the equivalence status granted to Switzerland and its stock exchange expire following stalled negotiations over a broader economic agreement).

[185] IOSCO, *supra* note 169, at 40-41.

[186] *Id*.

[187] See *supra* note 176 for examples.

Despite all of these disadvantages, unilateral recognition is the method of choice for the majority of regulators. The reason is that it can reduce regulatory competition and arbitrage.[188] The host country maintains full control over the access of foreign firms to its markets.[189] It will grant recognition only when the country of origin has a supervisory regime as strong as its own, and it may also withdraw recognition at any time. This is especially important in finance given the high stakes that are involved. Unilateral recognition is already used in many areas, including foreign derivatives clearing, securities prospectuses, and securities firms.[190] Despite its drawbacks, it could also be used for the whole FinTech sector. Under such a unilateral recognition regime, states would have no incentive for lax supervision of providers. If they tried to lower their standards, they would risk their firms being barred from accessing foreign markets.

C. *Introducing a Competitive Model of Supervision*

Uniform regulation does not necessarily halter competition between different countries. When they cannot compete over a laxer regime, states might compete over other parameters. *Dirk Zetzsche* estimates that financial centers aim at attracting investors by better protection, their level of expertise and the quality of their infrastructure.[191] In addition, differences between supervisors would persist.[192] As every firm knows, national authorities vary in their professionalism, responsiveness and speediness. This is not about a low standard or "light handed approach" but about different capabilities. When multiple authorities are in charge, it is likely that those of one state are more apt than those of another. FinTech providers would pay attention to the supervisory environment when choosing their place of establishment. This, together with the business environment, could influence a company's decision to settle down in one or the other country. One can already see FinTech "hubs" emerging, such as the United Kingdom or Switzerland, which are based on the existing infrastructure *plus* the welcoming and professional attitude of the supervisor.

Where does this leave the customers and investors? Although the rules would be uniform and the enforcement mechanism "equivalent" or "substituted compliant," there would nevertheless remain some differences in the quality of supervision.[193] Some financial centers would be hit by scandals, while others would be better at avoiding them. The customer would have an inherent interest in choosing firms supervised by a particularly trustworthy regulator. How could he do this? The first and most important condition would be information. The

[188] IOSCO, *supra* note 169, at 13-30.

[189] See *supra* note 176 for examples.

[190] IOSCO, *supra* note 169, at 13-30.

[191] Zetzsche, *supra* note 101, at 27-28.

[192] *Id*.

[193] *See* CFTC, *supra* note 178, at 45342-43 (noting that the CFTC will not require that the foreign jurisdiction will have identical requirements to those established under US law).

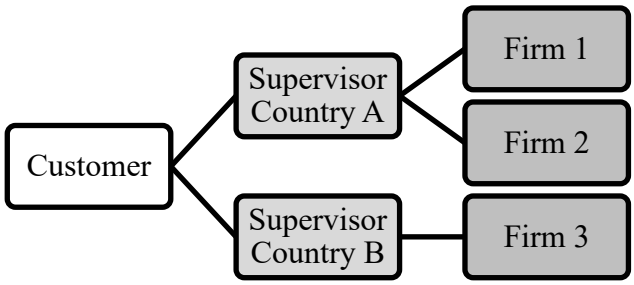
client would need to be informed not only about the firm, but also about the supervisor that is the responsible regulator for it. Thus, it would be necessary to distinguish between different types of clients. Professionals like banks could easily identify the competent supervisor and would know about its track record. No additional information would be needed. Retail clients, on the other hand, would be helped if the name of the FinTech firm's supervisor is clearly flagged. One could imagine a regulatory obligation to insert a clause like "supervised in country X" behind the provider's name. This "supervisor brand" would have to be used in all prospectuses, advertisings, and costumer communication.

Today, financial service providers are already oftentimes obliged to disclose the identity of their supervisor when they offer services abroad.[194] However, this requirement should be extended to *all* FinTech firms. Such mandatory information would serve several purposes. First, it would make it very clear to the client to whom he can address complaints about the service provider. Second, it would function as a kind of quality mark, similar to the "made in country X" that is known for physical products, which may enhance trust in the quality of a particular service. Third, the service provider could use this clause to signal its commitment to effective client protection in order to attract new customers. This could fourth, and most importantly, set off a race to the top among financial centers to have the strongest supervisory regime.[195] It would no longer be attractive to undercut the other's standards. Instead, states would try to outdo each other in terms of legal certainty and client protection. They would do so because they would like to attract FinTechs to their territory with a good track record in supervision that breeds trust in customers. This would be impossible if the competent supervisor were visible at one glance and it were known to everybody that this supervisor had overlooked several past scandals. In other words, supervisory quality would become a parameter of regulatory competition. This would be very different from the current situation in which states often liberalize their regimes to attract financial firms.

[194] *See, e.g.*, Council Regulation 600/2014 ('MiFIR') art. 46(5), 2014 O.J. (L 173) ¶1-2 (EU) (requiring third-country firms that provide services in the EU to indicate the name and address of their supervisor in writing and "in a prominent way").

[195] Evidence for a race to the top can be found for example in the 'gold-plating' of EU standards by Member States, see Luca Enriques & Matteo Gatti, *Is There a Uniform EU Securities Law after the Financial Services Action Plan*, 14 STAN. J.L. BUS. FIN. 49, 49 (2008); *see also* Rep. on the High Level Group on Financial Supervision in the EU (2009), at 50, (Feb. 25, 2009), https://ec.europa.eu/economy_finance/publications/pages/publication14527_en.pdf [hereinafter *HLG Report*].

Figure 4. Customers Choosing Firms Based on the Supervisor. The Competent Supervisor Will Influence the Customer's Decision for a Certain Firm.



An obstacle for such competition may be the inertia of the supervisor's staff. An officer working at a supervisory authority would typically have no direct personal interest in the promotion of its state as a FinTech hub. On the contrary, he may be incentivized to decrease his workload by deterring firms from its soil. On the other hand, bureaucrats desire to enlarge their personal power and prestige.[196] A bureaucrat's prestige may increase with the reputation of the supervisor domestically and abroad. States may use additional carrots and sticks to align the interests of their employees better with their own. This is another instance of the well-known principal-agent problem. By giving proper incentives to their employees, states may increase the common welfare.

To allow and stimulate supervisory competition, it is important that the customer not only know the name of the responsible authority, but also have access to information about it.[197] Once again, one could make use of the new opportunities of the internet. This medium allows transmittance of massive amounts of information with virtually zero transaction costs. Clients could, for instance, compare supervisors with regard to their staffing, experience, and track record. The necessary data could be processed for them by service providers, like special investor websites. The ratings and other reputational systems that have been discussed before could also be a useful device.[198] As mentioned previously, their disadvantage is that they only look into past performance and not into the future. Yet that is not necessarily a counterargument for their usefulness here. The important point is not that the prediction of future behavior

[196] HLG Report, *supra* note 195, at 76.

[197] A race to the bottom can only occur if the clients know about the risks shifted to them by a certain choice, see Trachtman, *supra* note 3, at 61-62; Joel P. Trachtman, *The International Law of Financial Crisis: Spillovers, Subsidiarity, Fragmentation, and Cooperation*, 13(3) J. INT'L ECON. L. 719, 731-732, 734 (2010); INTERNATIONAL LAW IN FINANCIAL REGULATION AND MONETARY AFFAIRS 188-99 (Thomas Cottier, John H. Jackson & Rosa M. Lastra eds., Oxford University Press 2012).

[198] *See supra* IV.A.

by a ratings system is 100% correct – it never can be. What is crucial is that supervisors be properly incentivized through competition. This would be the case if information about their past performance were publicly available on the internet. A bad reputation might destroy attractiveness as a FinTech center. States would therefore strive hard to avoid any scandals.

CONCLUSION

This paper advocates uniform regulatory standards for FinTech firms around the world. This is necessary if states do not want to deprive millions of customers of the benefits of new technologies, such as reduced prices due to economies of scale, stronger competition, and worldwide easy access to financial services. These benefits would be sacrificed if each country were to adopt its own FinTech regulation. Legal fragmentation and market segmentation would inevitably follow, which would foreclose the business case for many of the new technologies. As a way to avoid this result, uniform material standards are needed. It is suggested here that the FSB is ideally placed to help find regulatory consensus. Its mission should be extended from the prevention of stability risks to the promotion of innovation on the global level.

When it comes to supervision, however, this paper posits that an authority with worldwide jurisdiction is not recommendable. Such a body would have to be monstrous and would potentially suffer from tremendous organizational problems. In addition, its mistakes would have huge repercussions. It is therefore preferable to charge competing national authorities with enforcing the globally uniform standards. As a way to stimulate their competition, this paper suggests that firms be forced to mention the competent supervisor next to their name. This would have the benefit of informing the customer and sparking off a global competition for the highest quality of FinTech supervision. Another advantage is that investors would be empowered and would be incentivized to compare the performance of national authorities. The selection of the competent supervisor would therefore be put in the hands of the market.

Many problems remain. One is how to delineate the area of FinTech from other financial services. The regime that is suggested here – uniform global rules and mandatory information about the supervisor – only works if it is clear which providers are covered. This is not at all easy, as the notion "FinTech" is more a description of a new phenomenon than a precise regulatory term. A definition would have to be developed that classifies services in this category. Naturally, such a definition must be the same around the world, so it could open up the purview of the globally uniform rules. At this point, it is difficult to fathom whether FinTech services will have to be individually enumerated. It would certainly be preferable to find a common notion that both describes current services and is open enough for new ones that may be developed in the future. The three features that were outlined here – ubiquity, disintermediation, and concentration – could be used as a guiding post for this endeavor.