FTA
FINANCIAL TECHNOLOGY ASSOCIATION

Shaping the Future of Finance

Introducing the Future of Finance

Technology-driven innovation is transforming the way we offer, access, and benefit from financial services and markets in the United States. By using internet and mobile platforms, machine learning, automation, and other modern technologies to deliver financial products and services, financial technology ("fintech") companies are improving efficiency and transparency, broadening equity, access and inclusion, reducing costs, and increasing choice and opportunities for consumers and businesses.

These advances are coming at a critical time for the American economy. Millions remain underbanked or underserved, income and wealth inequality continues to grow, and small businesses seek to rebuild from the devastation caused by the COVID-19 pandemic.

Fortunately, fintech solutions offer a welcome new paradigm for equitable financial services and are reshaping the financial landscape in powerful ways:

- Modern payments systems are reducing costs and speeding the delivery of funds, which may be the difference between having to pay an overdraft fee or not;
- Lending platforms and innovative approaches to underwriting are expanding fair access to capital for consumers and small businesses;
- Personal finance apps are helping consumers improve their financial health by prioritizing paying back high-cost debt, managing personal cash flows, and avoiding fees;
- AI/ML (artificial intelligence/machine learning), cloud, and blockchain-based innovations are upgrading financial infrastructure to reduce costs and drive efficiencies; and,
- Fintech platforms are expanding equity ownership, offering long-term investing strategies, and providing low-cost access to advice and opportunities previously available only to a select few.

Though internet, mobile, and computing technologies have been expanding throughout financial markets and services for decades, 2020 accelerated these trends as COVID-19 set off unprecedented disruptions worldwide. Economic disparities are increasingly apparent and the demand for change is increasingly pronounced. Examples of delayed government relief efforts due to distribution or technology gaps have highlighted opportunities to further upgrade financial infrastructure in the U.S. And against the backdrop of an ongoing public health crisis, economic uncertainty, and novel social restrictions, consumer behavior and preferences have continued to shift.

Fintech solutions have emerged as critical tools to bridge our physical and virtual activities as people have become increasingly accustomed to digital access. Consumers may now be less likely to physically exchange cash with employees at checkout,[1] but more likely

[1] CNBC, "The coronavirus pandemic has caused a surge in demand for contactless payments, accelerating the shift from cash to digital options," December 2020.

to move their money online as they earn, save, and invest for the long run. Businesses both large and small are rapidly adjusting to these changes by enhancing their digital offerings. Though the COVID-19 pandemic will eventually subside, the financial landscape is permanently changing as fintech solutions become part of our day-to-day economic lives.

Diverse fintech products and services provide novel, convenient, and expanded access points into the financial system for individuals, households, and small businesses, ranging from mobile money services for basic savings and payments to digital applications for long-term investing or securing credit. Already, a consumer can exchange funds, select retirement investments, get a mortgage, pay for food, or manage expenses using fintech products. Tailored products are empowering individuals with different needs, and helping drive equity in the cost and quality of available services.

As a result of the new normal, Americans will rely even more on a digital economy than they did prior to the crisis. Multiplied across hundreds of millions of daily transactions, individual behavioral changes will drive further shifts towards fintech solutions. By enhancing productivity, increasing financial access, equity, and inclusion, and improving business models, fintech can transform economic outcomes. Fintech will power the future of finance.

Global Context

It is worth underscoring that fintech progress is occurring on a *global* scale. Fintech innovation around the world has been growing exponentially to improve on legacy approaches or solve ongoing challenges. Many countries are making substantial policy investments into their fintech sectors, with the UK recently releasing a comprehensive report to help support and grow their domestic sector.[2] The Basel Committee found that "the promise of digital finance to reach scale, reduce costs and, if coupled with the appropriate financial capability, broaden access is unprecedented."[3]

Case studies from the world's most populous country, China, provide a window into the state of global fintech and future competition. Chinese users are quickly shifting to an all-digital financial ecosystem in which fintech is not just mainstream but ubiquitous. As of the first half of 2020, AliPay had 1.3 billion active users, while WeChat had 1.2 billion. These platforms are actively pursuing further global expansion, including into European markets.[4]

This trend has echoed across the world, where consumer usage of fintech services doubled or even tripled in just the last two years.[5] A survey of 27,000 digitally active consumers in 27 global markets demonstrates significant rates of fintech adoption with

[2] UK HM Treasury, "UK's global fintech leadership bolstered by new review," (Feb. 26, 2021) (noting that "[a]n independent review has set out a plan for the UK to retain its global leadership in fintech by helping the country's financial technology firms to scale up, access the talent and finance they need, and deliver better financial services"); KPMG, "Governments' role in the evolution of fintech," December 2017.
[3] Basel Committee on Banking Supervision, Implications of fintech developments for banks and bank supervisors, February 2018.
[4] Business Insider, "Card networks should be worried about WeChat Pay's European expansion," (May 22, 2019).
[5] James Lloyd (EY), "What is next for Asia in Fintech Adoption," (May 12, 2020).

64% of those surveyed indicating use of such tools or applications.[6] Evidence of fintech growth and penetration is likely underpinned by a number of country-dependent factors, including: regulatory openness, healthy competition *and* partnership with established players, the ability to leapfrog a lack of prior infrastructure, freedom from legacy technology, acceptance of new entrants like virtual banks, and/or consumer preferences.

As the members of a dedicated community focused on supporting American fintech innovation, we are confident in our ability to compete on a global stage and advance the role of the U.S. in providing trusted, fair, equitable, and transparent financial products and services. We are committed to the principled and responsible development of new technologies and the advancement of consumer and small business interests. Together, we can help usher in a new generation of financial services both domestically and abroad.

Introducing the Financial Technology Association

The Financial Technology Association (FTA) is a nonprofit trade organization that educates consumers, regulators, policymakers, and industry stakeholders on the value of technology-centered financial services and advocates for the modernization of financial regulation to support inclusion and innovation. The FTA is focused on proactively shaping tomorrow's regulations, policy frameworks, and public understanding in order to safeguard consumers and advance the development of trusted, digital financial markets and services.

The Need for Sound Policy

The successful integration of fintech solutions in the American financial system starts with the adoption of national policies that recognize the importance of responsible and equitable innovation and encompass a coherent vision on key objectives, which include:

FTA's Policy Objectives

- Safeguarding consumers and promoting financial education and literacy;
- Providing fair, accessible, and transparent financial services to consumers, including marginalized and underserved communities;
- Championing the role of the U.S. and its norms in the global financial ecosystem;
- Encouraging responsible and equitable private sector innovation and competition; and,
- Further upgrading the national financial infrastructure.

[6] Ernst & Young, Global Fintech Adoption Index 2019, June 2019.

In order to satisfy these objectives, it is critical that U.S. policy and regulation remain forward-leaning and embrace the development of fintech solutions, subject to guardrails that build trust and ensure market integrity. Policy must foster financial outcomes consistent with key equity and access priorities, and allow for new entrants *seeking* heightened regulatory oversight. It therefore cannot remain entrenched in the status quo. Such an approach would undermine consumer and economic interests and cede our financial future to countries that are actively fostering technology-driven innovation.

Now is an exciting time for the development of fintech policy in the U.S. Open and collaborative processes that anchor regulation on principles of fairness, inclusion and transparency will lead to frameworks that prioritize the interests of consumers and the broader economy. By understanding where the world is and where it is heading, the U.S. can step confidently into the future of finance.

Following an in-depth discussion of the impact of fintech on financial health, access and opportunity, this paper will offer policy recommendations under five tracks -- all of which can help promote a more fair, equitable, and human-centric future of finance. These tracks are unified under a guiding "north star" concept: and that is *the idea that safeguarding, empowering, and advancing consumer and end-user interests should drive policy formulation*.

More specifically, the purpose of policy and regulation is to provide consumer safeguards and protections, while fostering business model innovation that can deliver access to safe, inclusive, low-cost, and properly tailored financial products and services. When considered in totality, the following five tracks form the underpinnings of a coherent, rationalized, and forward-leaning national policy framework that can even better satisfy core regulatory objectives.

FTA's Policy Tracks

1. Modernizing financial regulatory frameworks, charters, and licenses to reflect the current state of technology-driven financial services and to anticipate its further evolution.
2. Rationalizing and supporting federal and state regulatory frameworks to craft a coherent vision of federalism in the context of modern financial regulation.
3. Facilitating fintech partnerships with traditional financial institutions and encouraging the safe adoption of consumer-and-market-enhancing technologies.
4. Expanding ownership, responsibly increasing financial market accessibility, and increasing long-term investment opportunities to improve financial health, outcomes, and security.
5. Supporting innovation in regulatory oversight and compliance, including through the adoption of forward-leaning regulatory tools and technologies.

Why Fintech?

Before discussing how fintech can be implemented, it is essential to better understand why its implementation is so important and timely for Americans. The pandemic has added urgency, but many of the underlying issues in the existing financial system -- lack of access, systemic inequalities, certain inefficiencies, and misalignment with key consumer preferences -- have persistently lingered. Driven by renewed focus and ingenuity, fintech companies offer solutions that promise to vastly enhance the way Americans interact with and participate in the financial system.

Serving the Underserved

Fintech solutions greatly improve financial access and inclusion for underserved Americans.[7] This objective is founded on the belief that individuals and businesses should be able to access financial products and services for their unique needs in a responsible, affordable, and timely manner. On an individual scale, financial inclusion is a starting point for people to improve their day-to-day lives. On a larger scale, financial inclusion directly contributes to the health of communities, societies, and nations. Indeed, a driving principle of fintech is that "providing more people with greater access to financial services can help reduce poverty, generate macroeconomic growth, and increase the wealth accumulation of households."[8]

Yet too many Americans are shut out of the financial system because they lack access to fair and affordable financial services and opportunities. More than a fifth of all households in the United States are unbanked or underbanked.[9] With almost half of Americans unable to meet a $400 unexpected emergency,[10] this cohort is would benefit from solutions that can help increase savings or provide access to responsible credit.

Existing mainstream financial options are also less likely to be utilized by this population. For example, people who make less than $30,000 annually and have not graduated from college are less likely to own a credit card.[11]

The cost of financial exclusion is high. The ripple effects caused by inaccessible or inefficient financial services often drive underbanked consumers to undesirable, and at times, higher cost options, like payday lenders, money orders, check cashing services, pawn shop loans, and tax refund advances.[12]
The Federal Deposit Insurance Corporation (FDIC) found that the pandemic presents particular challenges for the unbanked and underbanked and is even likely to lead to a

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[7] United Nations Digital Financing Task Force, "People's Money: Harnessing Digitalization to Finance a Sustainable Future," August 2020; Milken Institute Review, "Fintech's Roadmap to Financial Inclusion," July 2020; The Review of Financial Studies, "To FinTech and Beyond," April 2019.
[8] Ribbit Capital, Letter to the Office of the Comptroller of the Currency, August 2020.
[9] Board of Governors of the Federal Reserve System (Federal Reserve), Report on the Economic Well-Being of U.S. Households in 2019, May 2020.
[10] Federal Reserve, Report on the Economic Well-Being of U.S. Households in 2017, May 2018.
[11] Bankrate, "Survey: Surprisingly few millennials carry credit cards," June 2016.
[12] Federal Reserve, Report on the Economic Well-Being of U.S. Households in 2019.

rise in unbanked households.[13] These populations depend more on physical interactions (e.g., visits to a bank branch or ATM) and paper instruments (e.g., checks and money orders) to conduct financial transactions, which COVID-19 has made difficult or scarce. Absent inclusive financial tools and services, a significant number of Americans may be left far behind in the country's economic progress.

Digital finance presents a solution by allowing underserved populations to participate in the financial system using smart-or-mobile phones.

According to 2017 data, nearly 1.1 billion unbanked people, representing two-thirds of the global unbanked population, owned a mobile phone.[14] Mobile phone usage closely correlates, not by coincidence, to rates of fintech adoption. In China and India, which hold the top spots for global mobile usage by total volume, an EY survey found that nearly 87% of respondents already use fintech services, and virtually all respondents (99.5%) were aware of online apps that offer fintech services.[15] The Toronto Centre noted that the "impact of mobile phones and other electronic delivery mechanisms on the availability of financial services to individuals, households and micro and small enterprises is the most advanced and widespread contribution of fintech to financial inclusion."[16]

In the U.S., roughly 60% of unbanked adults[17] and 70% of underbanked adults have a smartphone. Because the majority of unbanked and underbanked households have cell phones, providers can attract low-income customers through "innovative and convenient means"[18] like mobile apps. Recent statistics support this linkage. Between 2013 and 2017, a large decline in unbanked Americans corresponded to increasing usage of online and mobile apps: over the same period, the percentage of banked households that used mobile banking increased substantially, and the percentage that used mobile banking as the primary method of access to bank accounts rose from 5.7% to 15.6% over the same four-year period.[19]

By harnessing a commonplace tool that is already in the hands of most Americans, fintech has created new ways to access financial products, bypassing alternatives that may be challenging or inaccessible for geographic, socioeconomic, or cultural reasons. Some people may live in a rural area and lack ready access to a car; and some may be hesitant to walk into a physical branch in or outside of their community. These types of barriers can further limit access to non-digital financial services.

Fintech solutions can shorten the physical and emotional distance between a customer and a successful financial transaction by eliminating the need to travel to a physical location or have a face-to-face interaction, instead giving direct access to individuals in

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[13] Federal Deposit Insurance Corporation (FDIC), How America Banks: Household Use of Banking and Financial Services, 2019 FDIC Survey, October 2020.
[14] World Bank Group, The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution.
[15] Ernst & Young, Global Fintech Adoption Index 2019, June 2019.
[16] Toronto Centre, Supervising Fintech to Promote Financial Inclusion, December 2019.
[17] Pew Charitable Trusts, "What Do Consumers Without Bank Accounts Think About Mobile Payments?," (June 2016) (noting that 60% of the unbanked in the U.S. report having a smartphone).
[18] Charles Calomiris, Office of the Comptroller of Currency, Chartering the Fintech Future, December 2020.
[19] FDIC, "FDIC National Survey of Unbanked and Underbanked Households," (2017); *see also* Federal Reserve, "Consumers and Mobile Financial Services," (2016).

their homes or businesses. The Toronto Centre points out that digital financial inclusion can also improve gender equality. Due to its ability to "break down cultural barriers, and address mobility constraints and privacy concerns" -- in the U.S., but especially in countries where women may be more limited in traveling outside their home or community to engage in financial transactions -- fintech can increase women's access to and usage of financial services.[20]

Fintech can ease other obstacles for unbanked and underbanked households, which often survive paycheck to paycheck and cannot afford the high minimum balances and account fees that are often required.[21] Many fintech products and services require no or lower fees, offer smaller minimum loan amounts and free overdraft protection. Coupled with other user-forward features, like educational content that is directly integrated into an app, or saving and budgeting tools that automatically set aside income or alert the user before any fee is charged, fintech products can help lower-income consumers overcome many of the hurdles that keep them out of traditional financial products.

Fintech providers can offer these benefits because they have considerably lower overhead costs than traditional models. As they reside primarily on digital platforms, operate on automated systems, and do not require large physical footprints, they can reach scale, minimize costs, and pass on those cost savings directly to their consumers.[22] Further, small-dollar customers are just as easy to underwrite as higher-value ones due to the speed and replicability of tech-driven processes. These lower operating costs translate directly to more affordable and accessible products and services for unbanked and underbanked segments.

A particular sticking point for many American employees is the instability in personal income caused by the usual lag between the day wages are earned and the day they are paid.[23] Fintech companies can overcome these delays by depositing funds into an employee's account as soon as transfer instructions are received from the employer, rather than wait for funds to be cleared from the employer's bank. By accepting the minimal risk that the employer's bank is unable to fund the transaction, a fintech provider can decrease the customer's waiting time by two days. For some, those two days can make a vast difference.

Federal Reserve Governor Lael Brainard noted that for those living paycheck to paycheck, "the difference between waiting for a payment to clear and receiving a payment in real time is not merely an inconvenience; it could tip the balance toward overdraft fees, bounced checks, or collection fees."[24]

Faster payment systems can help reduce this burden, underscoring just how critical innovation is to expanding access, inclusion, and equity for underserved individuals and

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[20] Toronto Centre, Advancing Women's Digital Financial Inclusion, January 2018.
[21] Calomiris, Chartering the Fintech Future.
[22] ABA Banking Journal, "How Digital Experience Platforms Are Transforming Financial Institutions," January 2021; Milken Institute, "Digital Money Is Here: G20 (Thinking) Must Go Digital," November 2020; United Nations Digital Financing Task Force, "People's Money: Harnessing Digitalization to Finance a Sustainable Future," August 2020.
[23] Calomiris, Chartering the Fintech Future.
[24] Lael Brainard, "FinTech and the Search for Full Stack Financial Inclusion," October 2018.

households. In light of this, Governor Brainard noted that the Federal Reserve has “a role and, potentially, a responsibility to help create an infrastructure that facilitates safe, innovative, and ubiquitous faster payment services,” at least in part by “modernizing our infrastructure to support interbank settlement of faster payments in real time.” Fintech companies can help create, support, or administer this infrastructure to upgrade systems so that they drive safer, faster solutions.

Another critical advantage of fintech is that it can leverage data, subject to appropriate safeguards, to give financial access to people who do not have a credit score. The Consumer Financial Protection Bureau (CFPB) has found that there is a pressing need for products that serve the roughly 26 million Americans without credit records or scores, known as “credit invisibles,” and the additional 19 million with thin credit histories.[25]

Many unbanked and underbanked consumers do not have a credit score and are excluded from traditional financial services even though they are responsible participants in the economy. For example, an FDIC study of unbanked and underbanked households found that about half of the participants had been current on all of their bills in the prior twelve months.[26] This source of data demonstrates why financial providers may be able to responsibly use alternative indicators of creditworthiness. Using machine learning to analyze data sourced from online transactions and payments, utility and mobile bills, and other cash flow history, fintech providers can implement accurate loan and insurance underwriting and safely serve consumers that do not have a credit score. By opening this door, fintech solutions can provide new opportunities for consumers to establish and build a credit record, helping them finally move into the financial system.

Increasing Efficiency

Fintech promises to significantly increase efficiency for both providers and consumers. By relying on alternative data and AI/ML to improve platforms, systems and processes, fintech companies “can be agile in ways that improve on status quo friction points... [which] ultimately benefits consumers by giving them more affordable, tailored options.”[27]

Research shows that increased automation of features like customer interfaces and underwriting processes is lowering transaction costs: Federal Reserve Bank of Atlanta research finds that fintech platforms can have lower operating costs than certain storefront lenders,[28] and the Federal Reserve Bank of New York found that fintech lenders process mortgages 20 percent faster on average than traditional lenders.[29]

The way many fintech companies are structured further drives their efficiency. They tend to focus on excelling in one or two lines of business, so for example, initially providing only small business loans or only payment processing services before expanding their

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[25] CFPB, Targeting credit builder loans, July 2020.
[26] FDIC, 2017 FDIC National Survey of Unbanked and Underbanked Households.
[27] Calomiris, Chartering the Fintech Future.
[28] Larry D. Wall, “Fintech and Financial Inclusion,” (Federal Reserve Bank of Atlanta, Aug. 2017).
[29] Andreas Fuster, Matthew Plosser, Philipp Schnabl, and James Vickery, "The Role of Technology in Mortgage Lending," Working Paper 24500 (Federal Reserve Bank of New York, April 2018); *see also* Brainard, “FinTech and the Search for Full Stack Financial Inclusion.”

suite of offerings to include other services. This trend towards “unbundling” in fintech provides an alternative to universal banking by offering specialization and agility, resulting in a wider variety of cheaper, faster services for consumers. Research shows how fintech specialization has impacted credit issuance, with personal loans provided by a fintech lender rising from a 5% market share in 2013 to 38% in 2018.[30]

It is clear where the future of finance is headed. Companies “that can customize loan portfolios to meet the specific preferences of loan funders, that can take advantage of state-of-the-art information processing when screening and monitoring borrowers, and that can avoid the physical costs of maintaining branch networks, will increasingly win the competitive struggle to serve customers.”[31] In an increasingly digital economy, fintech offers solutions for more efficient and affordable financial services.

Addressing Customer Preferences

We now face not just the possibility, but the inevitability, of an increasingly digital world in which face-to-face financial transactions will become less common. It is not a stretch to assume that most financial interactions will move online in the foreseeable future.

Customer preferences for financial transactions are clearly shifting from high-touch to low-touch. Most people today would rather conduct financial transactions digitally than in person. A survey by Marqeta, a leading payment card processor, found that 21% of American survey participants considered an easy-to-use mobile app the most important benefit a bank can deliver, with younger millennials and Gen Z individuals in the 18-to-34 age group even more likely to agree (27%).[32] Almost half said they would consider using a digital-only banking service. We are not far from that reality. A 2019 FDIC study found that the use of mobile banking as a primary method of bank account access increased sharply among banked individuals in just two years, rising from 15.6% in 2017 to 34% in 2019.[33]

Preferences are also changing in ways that may be surprising and that demonstrate a move away from traditional products, like credit cards. Only around one-third of Americans ages 18-29 say they own a credit card, compared to almost two-thirds of Americans ages 50-64.[34]

These numbers indicate a need for multiple paths to financial inclusion, requiring innovation and flexibility. Fintech models and applications are positioned not only to meet customer preferences and demands but also to partner with traditional financial institutions. Many forward-leaning institutions recognize that fintech companies and solutions may be better viewed as partners or complements, and not just competition, and that bank-fintech partnerships hold potential in advancing the overall industry.[35] In

[30] Calomiris, Chartering the Fintech Future.
[31] Id.
[32] Marqeta Blog, “Marqeta survey indicates customers are making change in banking,” September 2019.
[33] FDIC, How America Banks: Household Use of Banking and Financial Services (2019).
[34] Cetera, Mike. “Survey: Surprisingly few millennials carry credit cards.” Bankrate. June 2016.
[35] EY, Unleashing the potential of FinTech in banking,” 2017.

the post-COVID financial landscape, fintech solutions will become a critical component both within and outside traditional banking.

The A to Z of Fintech

Fintech is a broad term spanning diverse innovative financial products and services for consumers, businesses, and markets, from A(fterpay) to Z(est) and everything in between. Though some ideas may be novel, arising as a response to new consumer trends or technological developments, others are direct responses to longstanding gaps or challenges that have not yet been adequately addressed. Many fintech companies were born when innovators spotted problems or inefficiencies in existing business models and identified technology solutions that could improve the status quo. Below are some of the major areas in which fintech has noticeably improved outcomes for consumers, investors, and the economy.

Payments

Payments technology facilitates millions of daily transactions of all sizes. By reducing the time and effort needed for clearing and settlement, these solutions can process payments efficiently and improve the accessibility, affordability, and speed of moving money for consumers. Traditional processes, by contrast, can be slower and more expensive, resulting in greater costs and waiting times for consumers.

Payments applications range from mobile wallets, peer-to-peer (P2P) transfers, virtual or contactless cards, and digital exchange platforms. The benefits for consumers and businesses are myriad. For example, virtual cards allow businesses to pay their employees quickly, exert more control over fraud and expenses, and facilitate transactions, especially in a post-pandemic world.[36] They allow consumers to pay for groceries or order a meal in a seamless integrated transaction through checkout and payment, whether by using a contactless card at checkout or a mobile wallet at home. Even insurance companies are using virtual cards to speed up claim payments and combat fraud.

Sophisticated technologies, like advanced back-end blockchain systems, help enhance payments services. Blockchain has the potential to provide a private, secure, and transparent means of tracking the complete life cycle of financial transactions. One company leveraging this capability is Figure Technologies, which is creating payments, lending, securities, and digital fund products and services, based on a use case of blockchain that allows for real-time settlement of dollar transactions, real-time trading without counterparty or settlement risks, real-time servicing and performance reporting for loan assets, and a fully auditable, immutable record of transaction data.

[36] Marqeta Blog, "What are virtual card payments, and how are they commonly used?", September 2020.

Figure notes that blockchain can benefit unbanked and underbanked individuals by improving on the “slow, expensive and error-prone” payments systems that exist today. For one, blockchain payment processing could “reduce the enormous amount of time and expenses associated with the current ecosystem… [and] allow much faster and more inexpensive payment schemes to be used for payroll, merchant transactions, and sending money between friends... without the time and expense of traditional payment rails, making it an economical offering for low-income consumers.”[37]

Wise, a global payments technology company, has brought new levels of transparency to cross-border payments by eliminating hidden fees that are common in international payments. The UK government has found that consumers are often unaware of exchange rate markups, and are significantly more likely to choose the best option when total costs are disclosed. That's led to the United Nations, World Bank, and IFAD calling for more transparent pricing to help lower remittance costs from the current 7% global average down to the UN Sustainable Development Goal of 3% by 2030 – an effort that could be assisted by leading fintech firms.

Noting the benefits of speed and reduced costs, federal regulators have highlighted the need for faster payments in order to create a fairer financial system. In 2019, the Federal Reserve introduced the FedNow Service, which aims to allow consumers and businesses to transfer money between bank accounts instantly or nearly instantly in a “ubiquitous, safe and efficient” manner.[38] Currently, only traditional banks can directly access the Federal Reserve’s payments system.

Fintech companies, however, could benefit the FedNow initiative and help upgrade products and services for consumers, whether through a new access regime or in partnership with banks. The Federal Reserve pointed to its network of 10,000 U.S. banks as a key advantage in creating universal access to faster payments, noting that those who tend to suffer most from payment delays are low-income Americans for whom even a delay of a day or two can quickly lead to mounting overdraft and late fees. Small businesses, too, depend on quick access to funds from sales to maintain cash flow, make payroll, and pay expenses as they come due. Leveraging the best technology and models available should be the approach taken to ensure that FedNow can have maximum benefit.

Lending and BNPL

Fintech lenders use online platforms and automated underwriting to provide funding to businesses and individuals in a more streamlined and accurate way. Using these services, people can request loans online and get approval for and access to funds quickly. Popular lending applications include online loans, lending marketplaces, and credit scoring.

[37] Figure Technologies, Inc., Letter to the Office of the Comptroller of the Currency, August 2020.
[38] PYMNTS.com, “The Fed Debuts FedNow”, August 2019.

One key advantage of fintech lending is that AI and machine learning can provide new insights into a borrower's creditworthiness and improve credit underwriting. These capabilities allow companies to serve people with needs that may not be addressed by conventional underwriting, including unbanked and underbanked individuals with thin credit files. Traditional lending models often shy away from these customers because the cost of underwriting them exceeds expected returns.

Using AI and machine learning, lending and underwriting technologies can create credit models that efficiently analyze data, including new data sources, in determining whether to extend credit to borrowers who may have difficulty getting a traditional loan. Information such as cash flow analysis, credit card usage, and payment patterns on utilities bills -- commonly referred to as alternative data -- can help accurately predict default risk and creditworthiness.[39] At the same time, AI underwriting can also improve outcomes for women and people of color, by increasing approvals and enhancing fairness.[40]

Alternative data can also help forecast income prospects, assess a borrower's prior track record and appraise collateral value in an automated way. A recent study by FinRegLab found that cash flow underwriting holds particular promise in small business lending, as businesses owned by minorities, immigrants, and women still face higher obstacles in obtaining traditional credit.[41] Using automated cash flow data may allow fintech lenders to engage in "faster, more sophisticated, and more consistent analysis" and can be especially valuable for startups and young businesses that have not built a strong credit history.

Both providers and borrowers benefit from the ability to optimize these processes through AI and machine learning. With lower default rates and more automated underwriting processes, fintech lenders can reduce costs and pass on those savings directly to consumers. They are also incentivized to provide credit to individuals and businesses that are normally overlooked.

One popular application of fintech financing is the buy-now-pay-later (BNPL) model, which companies like Afterpay and Quadpay have brought to the mainstream. These companies partner with retailers to provide point-of-sale payment options, allowing online shoppers the choice at checkout to pay for their purchases in a few installments over a short period. Generally, these offers do not require approval, charge minimal or no interest, carry no or low fees, and do not impact the consumer's credit score. Merchants, including major retailers like Etsy and Peloton, pay a small percentage of their revenues to the BNPL company, and in return, they see fewer abandoned shopping carts and increased purchase activity.[42]

BNPL solutions are at the forefront of normalizing long-term changes in consumer behavior. Though BNPL -- what older generations think of as layaway buying -- has been

[39] FinRegLab, The Use of Cash-Flow Data in Underwriting Credit, September 2019.
[40] Zest AI Blog, "Why The CFPB Should Encourage The Use Of AI In Underwriting," (Dec. 18, 2020).
[41] FinRegLab, "The Use of Cash-Flow Data in Underwriting Credit: Small Business Spotlight," (Sept. 2019).
[42] U.S. Chamber of Commerce, "Fintech Startups Update the Layaway Concept With Buy-Now-Pay-Later Payment Options," December 2020.

often associated with large purchases like washing machines, these options are now widely available for everyday items like jeans and baking supplies. These innovative models can spur economic activity, smooth consumer cash flows, eliminate traditional interest expenses, and reduce financial stress.

Beyond these advantages, there are several additional drivers of the success of this trend. First, more retail shopping is done online than ever before, with the pandemic pushing consumers further in that direction: online holiday sales in 2020 reached a record $188 billion, a 32% increase year over year.[43] Additionally, younger consumers are less likely to own credit cards than previous generations -- an estimated two-thirds of Gen Z or millennial individuals do not own one -- and are more comfortable using apps for their financial and other transactions.[44] BNPL companies tap into this growing population by seamlessly integrating shopping and financing.

Robo-advisors, E-Trading, and Ownership

Fintech innovators have taken massive strides in lowering barriers for consumers to access investment advisory services, which have often been seen as out of reach for the average investor. E-trading services have expanded access to buying and selling individual stocks at a low cost or at no charge to investors. Robo-advisors have risen in popularity as they give consumers access to a globally diversified portfolio of low-cost ETFs at a fraction of the price traditional advisors charge and without the high account minimums. These services have allowed millions of Americans to put their long-term savings to work. According to one report, direct-to-consumer robo-advisor platforms in the U.S. reached $257 billion at the end of 2018 and are projected to have $1.26 trillion in assets under management by 2023.[45]

A leading robo-advisor, Betterment, is focused on making investing more accessible and affordable for the average consumer. Believing that investing is not just for the wealthy, Betterment seeks to help individuals and families plan for their futures, save for long-term goals like retirement and college, and make smart choices about their money by, among other things, automatically allocating money based on a customer's risk profile.

Another robo-advisor, Wealthfront, allows individuals to partake in passive investing, based on a key principle touted by Wealthfront's Chief Investment Officer Burton Malkiel: that broad index funds are a stronger basis for a portfolio than funds that are actively managed by investment professionals. Because humans cannot statistically "beat" the market, retail investors are better off buying a broad universe of asset classes and minimizing fees and taxes instead of paying active managers. Retail investors can accomplish these objectives through index funds and ETFs that track major stock market indexes like the S&P 500 for example.[46]

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[43] CNBC, "Americans spent a record online over 2020 holidays," January 2021.
[44] Id.
[45] U.S. Digital Investment Management Market Monitor, Q2 2019, May 2019.
[46] MarketWatch, "Investing legend Burton Malkiel on day-trading millennials, the end of the 60/40 portfolio," July 2020.

Because robo-advisers can serve more customers at lower costs than human advisors, fintech companies have been able to increase competition and efficiency, reduce trading costs and commissions, and provide retail investors with opportunities previously available only to affluent investors.

Other companies focus on micro-investing, which allows people to save and invest small amounts of money, or expanding employee access to company equity ownership opportunities. Some fintech apps round up the amount on a consumer's purchases and invest the difference, in essence helping to save spare change and put it towards growth. This allows people to invest even if they may not feel they have enough funds, time, or appetite to take a more active role, by starting small and counting on those savings to eventually add up.

Ownership changes the trajectory of people's lives, whether it is attained through investment or employee equity. Fintech can make both more accessible. Carta helps companies and their investors manage their capitalization tables, valuations and investments, all with aim of creating more owners. Carta makes it easy for companies to grant equity to a broader swath of employees, helping to build an ownership economy that enables employee-owners to enjoy the unbounded upside that their work helps to create every day.

But the process must not stop there. Public and private actors must do more to help employee-owners optimize the value of equity ownership by providing them the resources to inform and unlock that value. For instance, Carta uses a simplified offer letter to help employees assess equity grants, and provides equity education as part of the onboarding.

Increasing equity ownership may start within the employee base, but it must expand to a broader swath of investors as well. This is especially true for investor access to growth-stage companies. For the preceding decade, fewer companies elected to go public, and those that did waited until later in their development. This means that much of the potential for large returns occurs in private markets. Fintech companies continue to work within the existing regulatory regime to facilitate access, but more can be done to ensure a broader universe of investors can fund the companies building tomorrow, and -- importantly -- benefit from that growth.

Personal Finance

The CFPB defines financial health as a "state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow them to enjoy life." Fintech apps that focus on personal finance give people better opportunities to achieve financial health by helping them budget, save, and monitor their money.

Using these apps, consumers can easily and efficiently keep track of their income, automate savings, avoid costly overdrafts and related fees, seek advice, and budget expenses. Some apps may alert users of a low balance and allow them to transfer money between accounts without paying fees, while others may enable auto-saving or household budgeting and provide automated alerts when users are getting off track. Others provide credit monitoring. Many feature useful information, advice and content that is built in directly into these products, helping to build financial literacy and awareness.

For example, dashboards and metrics can quickly analyze a customer's data to show spending patterns and areas of possible improvement, while other tools can calculate expenses and generate reports that might otherwise take a much longer time to analsyze. Some even provide incentives for pursuing financial health, like returning small percentages of money saved using the app.

Like many other fintech products and services, personal finance solutions are accessible, easy to use, and often free for users, which is a particular advantage for those who are unbanked and underbanked. By saving time with automation, increasing overall savings, incentivizing good financial practices, and educating customers on how to use their money wisely, such products can help people benefit from the financial system and grow their wealth.

Setting Sound Policy for Fintech

Government policy and regulatory frameworks play an important role in the development of fintech. Policy should aim to create stable and rational regulatory frameworks that foster responsible innovation, protect consumers, and improve financial outcomes. However, without proper consideration of the substantial benefits of fintech, policy can also hamper innovation and entrench the status quo at the expense of consumer choice and opportunity.

Within this context, existing financial regulatory frameworks and approaches must continue to be modernized to enable the progress of fintech and financial services in the U.S. Because traditional regulatory structures were not designed for an internet, technology, and mobile-based economy, they often do not fully align with newer business models that can scale rapidly and use technology to improve inefficient processes.

As history has shown, to protect consumers, spur innovation and foster healthy competition, a modern regulatory framework must account for the current state of the industry as well as its future trajectory.[47]

To achieve this, regulators should continue to build forward-looking frameworks that satisfy the spirit and intent of underlying policies, while recognizing that the rules must be proportionate and tailored to actual risks they seek to mitigate. Financial laws and regulations exist to allow the safe and efficient provision of financial services to

[47] Regulatory friction has arisen during other periods marked by substantial technological change. The creation of credit cards, the widespread integration of ATMs, and early internet-era advances in interstate banking all prompted shifts in regulatory frameworks.

consumers and businesses and to foster healthy, vibrant, and accessible financial markets. Innovations driven by these objectives should be welcomed and facilitated by clear and rational regulation.

It is accordingly critical that the U.S. pursue sound policies to foster fintech development and financial services innovation. It is possible to develop a more fair, inclusive, and human-centric future of finance by fostering new models more closely aligned with the interests of consumers and small businesses. Such policies can largely be organized under five key tracks unified and guided by FTA's "north star" concept.

> **FTA's Guiding "North Star" Concept:** Safeguarding, empowering, and advancing consumer and end-user interests should drive policy formulation.

More specifically, the purpose of policy and legislation is to provide consumer safeguards and protections, while fostering business model innovation that can deliver access to safe, inclusive, low-cost, and tailored financial products and services. Whether through consistent and robust data privacy and security protections, the promotion of choice, and the facilitation of new digital models and infrastructure, policy can help shape a future of finance that solves for historic challenges. The following five tracks, when considered in totality, form the underpinnings of this coherent, rationalized, and forward-leaning national policy framework.

Introduction to FTA's Policy Tracks

The first track is centered on the importance of further modernizing the current approach to chartering, licensing, and regulating financial institutions. Overly rigid conceptions threaten to entrench the status quo and stunt the natural evolution of financial services models. Policymakers must instead continue to anticipate change and recognize new, innovative models, subject to appropriate safeguards, that will benefit consumers and improve markets. Regulation should protect consumers and be proportionate and tailored to mitigate identifiable risks. Policy should allow both incumbents and new entrants to responsibly innovate, including those that seek heightened regulatory oversight in return for the privileges provided by participation in the financial system.

The second track is focused on openly addressing and agreeing on the important role of federalism in financial regulation. The dual banking system is a well-recognized and successful regulatory model that provides valuable insight into how state and federal frameworks can interact and operate in parallel. Based on this model and its success in limiting overlapping or conflicting laws, policymakers should recognize that in the context of fintech, both state and federal regulatory options can coexist and are essential to driving consumer benefit, healthy competition, and innovation.

The third policy track considers how policymakers can safely facilitate and encourage adoption of emerging technologies and beneficial partnerships between financial institutions and fintech companies that improve consumer access, choice, and opportunity. Whether through clear guidance or explicit recognition of fintech partnership or vendor models, policymakers can ensure that promising fintech solutions will continue to be integrated responsibly into financial services and markets.

The fourth track considers policies that can further enhance long-term ownership opportunities and the health of our financial markets. Capital formation remains critical to the growth of new businesses, and access to sound financial advice and long-term investment opportunities can be a great equalizer for a population beset by increasing inequality. As part of this effort, financial education and literacy are critical, and incentives should align to promote financial health. Sound policy can ensure that more Americans have fair and accessible opportunities to participate in our financial markets, own equity, and participate in wealth creation.

The final track is focused on modernizing how entities implement and comply with regulation and how regulators operate in order to satisfy their missions. New regulatory technologies ("regtech") and oversight models can improve regulatory outcomes, reduce compliance costs, and mitigate risks. A number of successful models are currently being implemented in the U.S., and examples from abroad can help drive further domestic advancement.

1. Modernizing Financial Regulatory Frameworks, Charters and Licenses

Because innovative, technology-driven financial services models will continue to rapidly develop and evolve, governing frameworks must not only accommodate current realities but also anticipate future needs. The financial system depends on a regulatory framework with the flexibility to accommodate creative approaches, rather than one that is reactionary and slow to adapt. This can benefit traditional actors and innovators alike.

The most direct way to ensure that a framework is fit-for-purpose is to enable the chartering and licensure of new entrants and business models that are willing to take on heightened regulatory oversight. Such options must be flexible enough to fit a variety of new business models that provide real-world consumer benefits.

Examples include a national banking charter that would allow fintech firms to join the U.S. banking system, or special purpose banking charters that recognize firms targeting a specific area of banking activities.[48] Credit card banks are a good historical example of special purpose charters,[49] and such entities have played an important role in expanding credit access in America. Fortunately, bank regulators currently have the statutory

[48] The Regulatory Review, "A Fintech Charter by Another Name," November 2020; William and Mary Law Review, "Modernizing the Bank Charter," April 2020; Harvard Law School Forum on Corporate Governance, "National Bank Charters for Fintech Firms," August 2018; Milken Institute, Letter to the OCC, January 2017.
[49] OCC, "Exploring Special Purpose National Bank Charters for Fintech Companies," December 2016.

authority to grant a range of charters, and should continue to exercise that authority consistent with articulated guidance and policies.[50]

To be clear, modernization of financial regulatory frameworks does not mean relaxing important consumer safeguards, but rather anchoring requirements to a clear analysis of the benefits provided by new models and an understanding of risks that require mitigation. Depending on the model, policymakers might consider additional safeguards or limitations in order to mitigate specific risks implicated by a particular business plan, including with respect to the use, collection, and safeguarding of customer information. Ultimately, allowing for the development of properly regulated pro-consumer models can increase choice and reduce the risk of further banking consolidation.

Additionally, an intended benefit of federal charters and licenses is that such regulated firms, assuming they satisfy properly tailored and proportionate regulatory requirements, would be granted preemption of certain state licensing requirements. Given considerable efficiency benefits, a clear route to national chartering or licensure would likely encourage more new entrants to undertake the responsibilities of a federally regulated entity, including heightened oversight, appropriate community reinvestment requirements, and related consumer protections. In exchange, supervised entities would gain significant regulatory clarity, which would allow them to focus on better serving customers, maximizing efficiency, and enhancing compliance.

The key to successful chartering and licensure models that support financial services progress is that they must be technology-neutral and scale the level of supervision to the activities, risks, and characteristics of each firm, whether a new entrant or incumbent. Regulations must be crafted so that they are proportional to the activities undertaken, tailored to mitigate identifiable risks, and not so unduly burdensome as to hinder such firms from developing new products and services. Financial regulators already have this authority and exercise it regularly -- what is at times missing is explicit and confident articulation of a consumer-centric innovation policy.

Policymakers and regulators alike must accordingly recognize and promote modern conceptions of banking and financial services that leave room for growth and innovation, rather than utilizing narrow and historically constrained concepts that will quickly become obsolete. This requires a forward-leaning look at how technological advancements can improve different activities, including banking and custodial, trading, and payments services.

Pursuant to this approach, differences posed by an innovative firm as compared to a traditional institution should not be grounds for an immediate disqualification, but rather taken as part of a balanced assessment in crafting appropriate and tailored requirements. The mission of many fintech companies to maximize efficiency with new operating models should not be viewed through a status quo bias that perpetuates negative preconceptions

[50] *See* American Bankers Association, "ABA's Comment on the FDIC Proposed Rule: Parent Companies of Industrial Banks and Industrial Loan Companies," (July 1, 2020) (noting a "commitment to charter choice," subject to appropriate guardrails, limitations, and protections).

about tech-forward companies. In many cases, fintech companies have simply discovered new ways to better solve customer or market challenges and to advance better customer and market outcomes.

U.S. regulators have shown welcome leadership in this area. Many have emphasized that regulatory certainty must be coupled with a flexible framework to capitalize on the vast potential of fintech to reduce risk, increase inclusion and efficiency, and provide better products and services. Others have noted that a failure to create viable regulatory paths for fintech creates greater risks by excluding fintech innovation altogether from federal oversight frameworks. By modernizing the regime, regulators can bring fintech firms into the federal regulatory perimeter and ensure *more* holistic oversight -- in other words, the opposite of a deregulatory effort.

Other global regulators and policy organizations agree that fintech supervision needs to be flexible and balanced and are taking similar approaches as they evaluate how to adapt their regulatory structures to incorporate fintech development. Common themes include principles of proportionality and tailoring requirements to mitigate identifiable risks.

For example, the European Central Bank has stated a desire to remain "neutral with regard to the specific technology that banks use, focusing instead on the risks involved and how to address them as effectively as possible," and believes that "regardless of whether banks use innovative or traditional methods, they should be subject to appropriate supervision, proportionate to their individual risk profile."[51] Following such logic, it would be unnecessary and impractical to impose blanket requirements when they are not implicated by a specific firm's activities or business model.

Payments Access

Another area where licensing innovation can greatly impact financial access and reduce costs is with respect to the federal payments infrastructure. Currently, such direct access is limited to traditional banks (i.e. "depository institutions"). As other countries have already done, the U.S. should examine how to provide fintech firms with access to the FedACH, whether by way of partnership with traditional financial institutions or through new participation models. Providing access to federal payments infrastructure would substantially lower costs for fintech companies offering payments services, which ultimately benefits consumers through lower-cost products.[52]

There are other major systemic benefits, too. Access to federal payments would increase innovation and competition. Moreover, allowing fintech firms to reduce their sole reliance on banks would diversify significant infrastructure risk away from single points of failure, as half of all ACH payment originations nationwide are currently generated by only two banks.[53]

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[51] European Central Bank, "Bank to the future: supervisors take on fintech innovation," November 2019.
[52] Wise Policy Insights Blog, "Fed Access for Payments Companies is Smart Policy," October 2020.
[53] NACHA, "Nacha Releases Top 50 Financial Institution ACH Originators and Receivers for 2019," April 2020.

The previously discussed FedNow initiative, which promises to integrate instant payments in the U.S., is a clear opportunity to modernize and improve payments. As the Federal Reserve rolls out FedNow towards its target launch of 2023, it can learn from many successful models across the world that demonstrate the benefit of explicit fintech participation in payments. We encourage the Fed to consider ways to involve fintech firms in the improvement of our payments infrastructure.

For example, the UK,[54] starting with Wise in 2018,[55] allows non-bank payment companies to directly access its Faster Payments Scheme and obtain a settlement account at the Bank of England. The EU, Canada, Singapore, Japan, and Australia are all launching or announcing similar initiatives that contemplate fintech participation. International governmental bodies are supportive as well. Following previous calls from the United Nations, World Bank and others,[56] the Financial Stability Board's (FSB) Committee on Payments and Market Infrastructures (CPMI)[57] recently recommended direct access for non-bank payment companies to help make cross-border payments more accessible and affordable.

India provides yet another example. It has implemented direct payments access through its Unified Payments Interface (UPI), a real-time payment system that facilitates inter-bank transactions. Established by the nation's central bank, UPI allows users to pay for goods and services and has flourished since the COVID-19 pandemic changed behaviors and people began to avoid using cash. As of June 2020, transaction volume on the platform had reached a record $1.34 billion.[58] UPI now stands to overtake the global payments market. Many laud UPI for revolutionizing financial inclusion in a country with over one billion people who have vastly different economic realities and needs.

Business Model Competition

A modern regulatory framework will foster more financial services competition, which will benefit consumers, businesses, and market participants. Competing business models promote choice and expand access to services. In order to further drive such competition, it is important that policymakers not tip the scale in favor of one type of business model at the expense of another.

For example, some fintech companies have developed business models to challenge traditional products that saddle low-income users with (and derive most of their income from) excessive costs, like overdraft fees. These firms may offer customers overdraft-protected and no-cost accounts and services and instead pursue other sources of revenue to make their business models economically viable, including through interchange fees.

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[54] Bank of England, FCA, Pay.UK, "Access to UK Payment Schemes for Non-Bank Payment Service Providers," December 2019.
[55] The Financial Times, "TransferWise becomes first non-bank to join BoE payment system," April 2018.
[56] UN Global Forum on Remittances, Investment and Development, "Blueprint for Action," December 2020.
[57] FSB CPMI, "Enhancing Cross-Border Payments," October 2020.
[58] PYMNTS.com, "India's UPI Hits $1.34B in June Transaction Volumes," July 2020.

In many cases, the fintech firm may enter a partnership with a smaller bank, which is able to use the scale of the fintech partner to reach a broader customer base and remain competitive with larger banks. This type of partnership is good policy in that customers gain broader access to lower-cost services and smaller banks are able to compete with large banks. In light of such positive developments, policy efforts to arbitrarily cap or reduce interchange fees, for small banks, could harm promising new models that aim to serve financially vulnerable consumers and expand choice.

The above example underscores two important policy takeaways. First, policymakers should foster fintech innovation that attempts to reach underserved populations that are challenged by high-cost and limited access to financial services. Second, policymakers must avoid setting additional arbitrary caps or limitations on business models, as even well-intentioned efforts can drive the unintended consequences of reduced competition, further bank consolidation, less innovation, less access and choice, and higher consumer costs.

SUMMARY RECOMMENDATIONS

- Support modern financial regulatory frameworks, chartering and licensing;
- Leverage fintech innovation in upgrading payments infrastructure, including through FedNow; and,
- Allow business model innovation and competition by avoiding arbitrary limitations.

2. Federalism for the 21st Century: Recognizing, Rationalizing, and Supporting Federal and State Frameworks

Fintech is often challenged by a patchwork of inconsistent, duplicative, or conflicting federal and state laws, which can undermine the efficiency benefits of national, internet-based models. Additionally, the complexity of multiple frameworks contributes to regulatory uncertainty and creates operational and compliance challenges for companies. This not only disadvantages fintech companies that must spend considerable resources on complying with each bespoke regulatory regime but diverts those resources away from initiatives that can benefit customers.

One leading fintech firm, Figure, currently manages over 130 state lending and servicing licenses and, prior submitting an Office of Comptroller of the Currency (OCC) charter application in November 2020, had planned to obtain another 50 state money transmitter licenses. Figure noted that the complexity and cost of maintaining so many licenses can detract from innovation and competition[59] and anticipates that a charter can significantly streamline supervision.

[59] Figure, Letter to the OCC, August 2020.

In order to solve this problem in the context of interstate financial services activity, the dual banking system in the U.S. can provide a useful benchmark for understanding how to harmonize or rationalize these laws. A similarly coherent dual-regulatory (i.e., allowing for both state and federal) system for fintechs may be able to reduce fragmentation and redundancy in the current system.

Dual federal and state-based regulatory models can strike an effective balance between the powers of federal and state governments while facilitating consumer choice, access, and competition.[60] Such a modern approach would ensure that fintech firms have the ability to compete with traditional providers, while being subject to appropriate regulatory oversight. As with banking firms, this oversight can occur at the state or federal level.

There are a number of non-exclusive ways to implement coherent policies in the U.S. that allow for state or federal regulation of fintechs, the need for which is becoming increasingly urgent as the financial services industry continues to rapidly evolve. Each of these approaches can drive beneficial competition subject to appropriate consumer protection safeguards.

One approach at the federal level that was discussed in the preceding section involves federal chartering or licensure of fintech platforms operating on a national scale. A federally regulated fintech firm would typically be granted preemption over most state licensure laws while still being subject to state anti-fraud and certain other consumer protection laws. Contrary to a common misperception, pursuing federal oversight is not deregulatory, but rather would subject a firm to often heightened oversight by a federal banking regulator (e.g., the Fed, OCC, or FDIC) and/or a federal market regulator (e.g., the Securities and Exchange Commission or Commodity Futures Trading Commission).

A second approach is to support ongoing efforts to streamline state-level regulation, which is increasingly emerging as an attractive and viable framework for fintech firms. The Conference of State Bank Supervisors (CSBS) has recognized that to harmonize and strengthen multistate supervision, it is necessary to implement an interconnected network of state regulation and coordinate with federal agencies, which would reduce redundancy and increase efficiency.

For example, under its Vision 2020 initiative, the CSBS is working to create a more streamlined oversight and examination process for fintech firms and, ultimately, a coherent and unified state regulatory framework that aligns with the federal regime.[61] One particular area of focus by the CSBS is to achieve uniformity in state money transmitter laws, which due to their inconsistencies and cost of compliance may impede fintech firms.[62] These CSBS efforts should be applauded, supported, and expanded to other financial services activities, including lending.

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[60] Bureau of Consumer Financial Protection, Taskforce on Federal Consumer Financial Law Report, January 2021.
[61] Conference of State Bank Supervisors, CSBS Announces Vision 2020 for Fintech and Non-Bank Regulation, May 2017.
[62] Morgan Lewis, "Making it the same everywhere: States strive for uniformity in money transmitter laws," Feb 2020.

The CSBS is also updating the Nationwide Multistate Licensing System (NMLS) with a new technology platform, which will be the first nationwide system to integrate regulators and companies for examinations. In doing so, they will increase transparency and allow companies to more easily navigate state licensing and regulatory requirements. The goal is for states to coordinate on single regulatory examinations for a firm -- expanding the idea of "one company, one exam" for state-regulated money transmitters[63] -- which can substantially reduce costs and increase the attractiveness of state-based regulatory frameworks.

A third approach would be predicated on state passporting or reciprocity with respect to licensure and oversight. Based on the model of the European Union's Payment Services Directive, which permits any EU firm to obtain recognition for its license in other EU countries, it should not be a stretch for U.S. states to afford each other the same deference. Indeed, if EU member states, which are independent sovereign nations, can effectuate such a regime, then surely our U.S. states can do the same. This model in the EU has helped drive competition between banks and nonbanks while ensuring ongoing consumer protection.

A final approach recognizes and facilitates partnerships between traditional financial institutions and fintechs. Whether through explicit recognition of such relationships or guidance that clarifies expectations, regulators can safely foster such models to the benefit of consumers, businesses and market participants. This approach is addressed in more detail in the next section.

With respect to all four coherent regulatory models proposed here, collaboration and coordination across federal and state regulators will be critical to achieving consistency on principles, standards, and expectations. Collaboration can also advance technological understanding across regulators, who can share learnings and best practices rather than individually reinventing the regulatory wheel.[64]

To this end, Federal Reserve Governor Michelle Bowman recently noted that interagency collaboration is a key goal for the Federal Reserve and suggested working with the OCC and FDIC "to enhance and align interagency guidance for third-party risk management… [and] eliminate the need for community banks to navigate multiple supervisory guidance documents on the same issue."[65]

More coordination, including across federal and state regulators, would drive greater certainty, allowing fintech companies to focus more of their efforts on efficiency, customer service, and effective compliance. Clarifying regulatory guidance and requirements is also likely to prompt more fintech companies to adopt emerging technologies and welcome participation in fit-for-purpose regulatory regimes.

[63] CSBS, "State Regulators Roll Out One Company, One Exam for Nationwide Payments Firms," September 2020.
[64] Daniel Gorfine, Chief Innovation Officer and Director of LabCFTC, "LabCFTC: Developments and Discoveries," remarks delivered June 2019.
[65] Michelle Bowman, Speech delivered to the Independent Community Bankers of America (ICBA), "Technology and the Regulatory Agenda for Community Banking," December 2020.

At the agency level, there is potential to establish a new frontier for regulatory coordination. Agencies should continue to identify and focus on opportunities to coordinate regulatory efforts by working with each other to create a consistent regulatory regime for new innovative technologies. Agencies should also continue to increase dialogue with state regulators to share approaches and streamline regulation.[66]

A final and critical point to underscore in the context of federalism is the importance of uniform laws in substantive areas where the costs of divergence and fragmentation outweigh the benefits of testing varied approaches. This may be especially true in the context of internet or mobile-based fintech platforms that are intended to scale nationally and for which creating bespoke rules for each state is inefficient and costly. As a prime example, data privacy is an area where states have divergent policies around how consumer data should be safeguarded, shared, and utilized. The lack of consensus in fact destabilizes the effectiveness of such laws, demonstrating why uniformity through state or federal legislation is needed.

SUMMARY RECOMMENDATIONS

- Support coherent federal and state regulatory options for fintechs, modeled on the dual-banking system and regulatory framework;
- Support ongoing state efforts to streamline and modernize oversight and examination approaches;
- Advance federal and state regulatory collaboration and coordination; and,
- Promote uniformity in substantive laws and requirements where divergence drives cost, inefficiency, and uneven compliance.

3. Fintech Partnerships & Technology Integration

Fintech is driving positive change in financial services and markets and is already lowering costs, increasing efficiencies, and enhancing access and opportunities. Forward-thinking financial institutions have recognized these benefits and are actively looking to partner with leading fintech firms or adopt and incorporate advanced technologies.

Indeed, in the wake of COVID-19, which dramatically shifted consumer behaviors towards digital and mobile usage, many banks are actively working to enhance their own technological capabilities and service offerings either by way of partnership or procurement.

In a partnership, fintechs and traditional institutions both bring different advantages. Fintechs typically bring innovative cultures, technologies unencumbered by legacy

[66] Bureau of Consumer Financial Protection, Taskforce on Federal Consumer Financial Law Report, January 2021.

systems, speed, and nimbleness. Traditional financial institutions may bring experience, scale, and operational horsepower.

One large multi-national bank calls for a “well-balanced mutualism – two parties bringing complementary core competencies and resources together to innovate and offer a new value proposition that benefits both, while addressing a market need.”[67] A 2020 Capgemini World Fintech Report calls incumbent banks that adopt this approach “inventive banks.”[68] In weighing whether fintech companies are “tangible competitors or enabling partners,” inventive banks have chosen the latter and are prepared to redefine their roles through collaboration.

Policymakers can and should encourage these partnerships between banks and fintech, which can play to the unique strengths of both sides and consequently produce better products and services for consumers. Federal Reserve Governor Bowman discussed the critical symbiosis between fintechs and banks and pointed out that community banks in particular have much to gain from fintech partners to “open new lines of business, help with customer acquisition, enhance customer service, and improve operational functions.”[69] Recognizing that banks should view fintech as an opportunity, not a threat, she went on to discuss a wide range of emerging partnership models and called for ongoing conversation amongst stakeholders to further enhance these arrangements.

Unfortunately, some financial institutions have been hesitant to partner with fintech companies due to insufficient regulatory guidance or concerns about regulatory risks. Both fintechs and banks need greater regulatory certainty and guidance, which would not only increase compliance but also promote policy goals of financial inclusion, growth and competition.

Clear, principles-based guidance from regulators can help foster such partnerships and help states and courts recognize that these partnerships are sound, safe, and subject to rigorous oversight. In many cases, aspects of partnerships and technology integrations can greatly benefit from regulatory clarity.

Open Finance

Regulators should aim to ensure the benefits of and provide clarity on open finance by implementing regulations on Dodd-Frank 1033, the single section of U.S. law that gives consumers rights to their data since its passage in 2010. Additionally, policymakers should work to encourage the free flow of data from other institutions that touch a consumer’s financial life, including payroll companies, telecom and utilities providers, government data such as Social Security, and more.

By enabling free-flowing information, subject to privacy and security guardrails, and consumer-directed collaboration among financial and fintech entities, open finance aims

[67] Deutsche Bank, “Fintech 2.0: Creating new opportunities through strategic alliance,” June 2016.
[68] Capgemini Research Institute, World Fintech Report 2020.
[69] Bowman Speech to ICBA, December 2020.

to give consumers total ownership of their own financial data -- including transaction history, real-time account balances and loan payment history -- so that they can access the services best suited towards their individual needs. Consumers can then rely on their ability to authorize third party access to their financial information in order to unlock fintech products and services that help them conduct their financial lives.

Open finance has the potential to transform products and services across financial services and more. Plaid, an open finance data network, has a mission of unlocking financial freedom for everyone by giving people and small businesses more control over their financial data and the ability to secure more actionable and affordable services. By allowing consumers to digitally permission their data from historically captive accounts, open finance networks power competition and innovation in the financial services space -- creating more opportunities for consumers to benefit. As Plaid notes, the use cases for fully open finance are myriad: "Getting approved for mortgages and loans could become instantaneous and fully digital with access to data on assets, liabilities, and net income. Switching a pension could become automatic based on current and projected portfolios. Financial advice could become much more personalized and powerful with improved data access. These examples are a small sampling of what open finance makes possible: we don't yet know the true value of an open financial system and all the potential use cases that could emerge."[70]

Initiatives in the UK and EU have already created new regulatory frameworks for data-centric fintech innovation in Europe, which has given people and businesses power over their own data, but also provided valuable lessons on the limitations of a prescriptive regulatory regime. In the U.S., open finance is a critical area for continued market and regulatory development. To support consumers' ability to benefit from innovation and competition in financial services, we encourage regulators and policymakers to:

- **Establish a broad data right that is consistent across direct and authorized access:** Consumers' financial data belongs to consumers, and their access to that data should not depend on who is currently holding that data. Currently, some data holders restrict consumers' ability to access their own data, which prevents consumers from benefiting from service provider and product choice. The CFPB should require that a data holder cannot limit any information that can be reasonably construed as belonging to the consumer for both direct and authorized access. This requires the data access scope to include all of the information consumers need to access the fintech ecosystem today and in the future.
- **Ensure a level playing field that includes all Americans:** America's banking ecosystem is robust and diverse, and not all banks have the same resources to invest in data sharing technologies. The CFPB must be careful to ensure that Section 1033 rulemaking does not generate an unlevel playing field for consumers, where consumers' access differs depending on where they bank. This requires the CFPB to not prescribe specific technologies for data sharing that may be less accessible to smaller banks than larger banks, and instead to

[70] Plaid Blog, "Open finance and the future of digital financial services," June 2020.

allow financial institutions to choose for themselves how they can comply with consumers' data access rights.

- **Require transparency and controls:** Consumers want to feel more in-control over their data, and industry can take steps to provide that control. The CFPB should establish strong guidelines for consumer transparency and control, including that consumers be aware of all parties involved in data sharing and have controls over which data they are sharing, with whom, and for what duration.
- **Support standards-development in service of consumer rights:** Industry will continue to collaborate to develop standards that promote access. The CFPB should take steps to ensure that standards are in service of consumer rights. The CFPB should encourage the continued development of industry standards by establishing baseline principles and expectations that those standards must meet.

Greater regulatory guidance on the next wave of open finance will encourage the ecosystem to continue developing better products and services to accommodate the diverse financial needs of consumers.

Lending Partnerships

Lending is another critical area that requires greater clarity. Bank and fintech partnerships that provide lending products and services can significantly expand needed access to capital. However, certain legal questions have long been a sticking point for these types of partnerships and created regulatory ambiguity for models that seek to expand access to capital for underserved consumers and small businesses.

Recent efforts by regulators to provide further clarity are welcome, but should be part of driving broader consensus on permissible models and partnership standards. Indeed, ongoing legal challenges and lawsuits continue to cause confusion and instability for banks and fintech companies that are attempting to collaborate in a compliant manner. Regulatory discord ultimately hurts consumers and businesses by stifling innovative models and capital access. The failure to provide clarity and uphold contract validity introduces secondary market risk, reduces liquidity, including in times of economic stress, and restricts credit availability.

To create a stable environment for bank-fintech partnerships, state and federal regulators must act decisively and craft a forward-leaning consensus on how banks and fintechs can structure and operate lending partnerships. A recent settlement in Colorado between the State Attorney General and bank-fintech partners, which created an effective safe harbor for such partnerships, might serve as a baseline for harmonizing a consistent, national approach that includes consumer protections.[71] Ultimately, clear regulatory standards around such partnerships, which uphold the validity of these models, will benefit consumers and small businesses with greater choice and capital access.

[71] Ballard Spahr LLP, "Colorado Settlement Provides a Possible Path Forward for Certain Bank-Fintech Online Lending Partnerships," August 2020.

Brokered Deposits

Another important area of development for partnerships concerns business models where a fintech partners with banks to take customer deposits. Generally, the fintech firm will offer services to customers that are built around or include deposits held at partner banks. In this scenario, customers can make deposits that are safeguarded and typically able to earn interest, while the fintech firm is able to provide adjacent, high-value services to customers, including payments, overdraft protection, trading, savings, and accounting services.

Recent regulatory action around brokered deposits, however, may inadvertently harm fintech-bank partnerships. For example, setting arbitrary thresholds, like capping the percentage of assets that a fintech is permitted to route to a bank partner for deposit purposes, risks undermining an arrangement that is in the best interest of consumers and investors. As similar rules are considered that would impact fintech-bank partnerships, including around interchange fees as noted above, it is important that regulators avoid measures that will have unintended consequences for consumers and competition.

Technology Adoption and Third-Party Vendors

Beyond explicit partnerships, financial institutions also need greater regulatory clarity regarding their ability to adopt and incorporate promising technologies provided by third-party vendors, like cloud technologies and automation, compliance, and related AI/ML tools. This can be accomplished with regulatory guidance that defines expectations and provides clear guideposts for adopting new technology. Sound policy would recognize the benefits of harnessing leading-edge technologies and should actively seek to facilitate such adoption.

One promising model was recently proposed by the FDIC. In 2020, the FDIC issued a request for information to promote the adoption of promising technologies, which included ideas regarding the establishment of standard setting organizations and the creation of voluntary standards certification programs.[72] Broader industry efforts focused on establishing standards and consistent regulatory oversight expectations, including around cybersecurity,[73] are also worth promoting, as is further leveraging the capabilities of the National Institute of Standards and Technology (NIST). We strongly encourage further exploration of these models and related concepts that can increase certainty and speed up the safe adoption of technology in financial services.

Other areas where technology holds substantial promise in improving operational efficiency and ensuring compliance include anti-money laundering (AML)/know-your-customer (KYC), trade and market surveillance, and fair lending. Indeed, explainable

[72] FDIC, Request for Information on Standard Setting and Voluntary Certification for Models and Third-Party Providers of Technology and Other Services, July 2020.

[73] The Financial Services Sector Coordinating Council (FSSCC) created the "Cybersecurity Profile," which helps to create consistent oversight requirements and compliance best practices with respect to cybersecurity. The FSSCC and U.S. Treasury have developed a strong public-private partnership with the shared goal of maintaining a robust and resilient financial services sector.

AI/ML technology holds substantial promise in solving for inefficient and at times ineffective financial crime detection, lagging anti-fraud and anti-manipulation surveillance, and legacy disparate impact analysis.

Specific to financial crime, over the last couple of years, the federal banking agencies launched a number of initiatives to promote innovation. For example, in December 2018, FinCEN, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the National Credit Union Administration, and the Office of the Comptroller of the Currency issued a joint statement encouraging financial institutions to take innovative approaches in their AML compliance programs. Additional policy efforts to foster technology advancement and adoption in key compliance areas can drive meaningful financial services modernization efforts.

SUMMARY RECOMMENDATIONS

- Recognize and facilitate fintech-financial institution partnerships;
- Ensure requirements do not inadvertently impede such partnerships and their ability to provide valuable and innovative products and offerings; and,
- Increase clarity around -- and the development of standards for -- third-party vendor management, technology adoption, and compliance innovation.

4. Expanding Ownership, Responsibly Increasing Financial Market Accessibility, and Increasing Long-term Investment Opportunities

U.S. financial markets continue to lead in the world, providing capital to hire, grow, and innovate. However, they do not always offer individuals a fair chance to participate in the country's economic success. Accessible markets that provide *all* Americans with an equal opportunity to invest in long-term growth opportunities and promising companies may be critical to closing our widening wealth gap.

Fortunately, many fintech firms are actively developing new models and solutions that leverage technology in order to provide people with financial advice and access to investment opportunities that were previously only available to the very wealthy. As discussed earlier, some fintech platforms are offering free or low-cost financial planning, investment management, and cash management services to retail investors who would otherwise be ignored by traditional financial institutions or charged substantial fees that erode future savings. Fintech platforms, including low-cost robo-advisory services, are working to safely provide more individuals with access to public and private markets and sound investment opportunities.

Policymakers should seek to foster these developments, which have reduced costs and increased investment access. The SEC’s most recent amendments to the Jumpstart Our Business Startups Act of 2012 (JOBS Act) were a step in the right direction, allowing individuals who are not necessarily wealthy to take advantage of early-stage investment opportunities. By leveraging new technologies and platforms that efficiently connect those seeking capital with those providing it, fintech can drive economic growth, market efficiencies and wealth formation.

To be clear, there is more to be done. Other recent SEC amendments made only nominal changes to the definition of an accredited investor, the gating standard that enables investors to invest in private offerings. This ability is critical to broadening wealth creation. As noted earlier, more companies are waiting longer to go public or are electing to stay private. The number of public companies has been in steady decline since 2000 and the median range for an initial public offering has increased from 8 years between 1990 - 1998 to 11 years between 2001 - 2018. Although there has been a recent spate of direct listings and special purpose acquisition vehicles bringing more companies public, policymakers should not ignore the longer trend of growth and concentration occurring in private markets.

High wealth and income should not be the central proxies to determine whether someone is sophisticated enough to make informed investment decisions and access this market. To that end, regulators might consider reducing financial thresholds and expanding onramps to qualify as an accredited investor through knowledge-based tests, training, and certifications. Doing so expands the investor to this diverse asset class of growth-stage companies.

Additionally, as private markets continue to develop, along with the capital raising mechanisms created by the JOBS Act, it will be important for policymakers to consider ways to expand secondary markets and enhance overall liquidity in private markets.

Secondary market liquidity lowers the cost of capital formation, helping businesses raise the money they need to invest in their future. Without liquidity, businesses "trying to attract capital often struggle because potential backers are reluctant to invest unless they are confident there will be an exit opportunity."[74] Further, market liquidity allows employee-owners and investors to realize the gains they have made. Investors can then recycle these gains into additional investments, funding new ventures, and restarting the cycle.

Certain policies may run counter to these goals. For example, restrictions on the secondary sale of issued securities can impede the functioning of healthy markets and deter investor participation. Therefore, policymakers should consider ways to leverage the potential of new trading platforms in order to deepen and invigorate secondary markets.

Finally, policymakers should explore ways to encourage broader inclusion of low-cost robo-advisory models amongst the options individuals have when selecting from retirement or education investment plans. As noted in the sections above, such models provide individuals with low-cost advice and access to passive, long-term investment strategies that have frequently outperformed traditional, high-cost options. These options

[74] Letter from SEC Advisory Committee on Small and Emerging Companies (May 2017).

can save individuals tens-of-thousands of dollars in the long-run and support the financial health of our broader population.

SUMMARY RECOMMENDATIONS

- Support policies and investment platforms that provide financial education and responsibly expand access to sound investment opportunities;
- Leverage new technologies and platforms to drive capital and wealth formation; and,
- Pursue policies that support healthy, robust, and accessible primary and secondary markets.

5. Innovating Regulatory Oversight and Compliance

Regulators have been modernizing regulatory approaches and tools to keep pace with innovation. Advances in technology can greatly enhance how we regulate and comply with regulation. The development of innovation offices and related programs across the federal and state regulatory landscape are encouraging and should continue to be promoted. Similarly, these innovation offices should be incorporated into the fabric of every agency. Additionally, more agile and digitally-native regulation can be implemented in a number of ways as discussed below.[75]

First, regulatory sandboxes and robust no-action letter programs can permit the testing of new products and business models, allowing both innovators and regulators to learn from market outcomes. While such tools should remain voluntary, they can help to de-risk activities that would otherwise likely be blocked at inception. These programs can benefit from cross-agency and even cross-jurisdiction efforts. Indeed, the cross-national testing being conducted by the Global Financial Innovators Network (GFIN) is a good example of such forward-leaning initiatives.

Second, creating fintech advisory committees pursuant to the Federal Advisory Committee Act (FACA) at all federal financial regulators can help Agencies keep pace with fintech developments, identify promising opportunities to improve financial services and markets, and detect new market, operational or consumer protection risks. While many agencies have existing technology-focused committees, a more specific mandate to explore fintech developments can enhance overall literacy and understanding for both the industry and the regulators. Fintech FACA committees could be a key tool to modernize regulatory engagement with the fast-developing fintech industry. Congress took an important step in this direction in the recently passed Anti-Money Laundering Act of 2020 when it created a subcommittee on Innovation and Technology in the Bank

[75] Alliance for Regulatory Innovation, RegTech Manifesto, July 2020.

Secrecy Act Advisory Group (BSAAG) that will enable regulators to receive advice on regtech innovation.

Third, regulators should look for ways to use technology to increase the efficiency and effectiveness of regulatory compliance. For example, modern regulatory reporting infrastructure can replace current "batch and send" systems that impose substantial cost on industry and regulators. Standardized and API-enabled reporting systems can reduce costs for all parties and generate actionable data and insights. And machine readable and executable rulebooks can help automate and improve overall compliance. While these systems will require collaboration between regulators and industry, they can result in true win-win outcomes.

Fourth, it is important that regulatory review processes for new products and applications keep pace with the modern market. As previously noted, technology-driven financial innovations are able to iterate and scale rapidly, which means that unnecessarily prolonged reviews will result in stale or obsolete conclusions. To this end, whether through expanded sandbox programs or broader adoption of the principle of proportionality, regulators should be held to appropriate review deadlines and assessed on related key performance indicators (KPIs). One way to encourage more efficient regulatory review processes would be to grant conditional product or licensure approvals if a regulator fails to meet the designated review deadline.

A final area where new technologies and approaches can enhance compliance and the efficiency and effectiveness of regulatory oversight is around KYC and AML requirements. For example, a national effort to advance digital identity standards and solutions, including through secure API access to government-held data, could substantially improve the infrastructure upon which many digital solutions are built. Improvements in the area of digital ID would ease compliance for financial providers, expand consumer access to services, and reduce the risk of fraud and other financial crimes.

If deployed wisely, modern technology can be instrumental in fighting financial crime. Recent efforts by the banking agencies to promote innovation and risk-based examinations, as well to focus on effectiveness, as opposed to check-the-box exercises, can go a long way in reforming and tailoring the AML regime, while promoting financial inclusion.

However, there is a need for more guidelines for, among other areas, the implementation of AI/ML for AML transaction monitoring. Here, if FinCEN and regulators could clearly define their objectives and provide guideposts, fintech companies could develop and implement "smart" machine learning-based technologies that can help identify patterns and behaviors that current rules-based systems, built on static monitoring rules, are incapable of detecting. Greater latitude for regtech innovation can optimize efficiency without further complicating legacy systems and processes and perhaps eventually replace static rules.

These final points highlight the opportunity for technology to advance the effectiveness of regulatory oversight and industry compliance across fraud, AML, digital identity, and trade and transaction surveillance. Regtech innovation requires the continued support of regulators. Regulators should also be empowered to move in parallel with industry into the 21st century and, together, serve Americans better and more efficiently. Building on recent progress will result not only in enhancements to compliance programs, but also safer, more inclusive, and better regulated financial products and services.

SUMMARY RECOMMENDATIONS

- Empower federal and state regulator innovation programs and expand voluntary sandbox, no-action, and testing initiatives;
- Create fintech-focused FACA committees at key federal financial regulatory agencies;
- Modernize regulatory reporting and compliance requirements to be digitally native and more effective in satisfying regulatory objectives;
- Enforce regulatory review period deadlines and develop regulator KPIs; and,
- Apply principles-based frameworks to facilitate the development of regtech solutions that can solve for regulatory objectives involving fraud, identity, money laundering, and trade and transaction surveillance.

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APPENDIX

The Building Blocks of Fintech Innovation and Impact

To understand the current state of fintech development, it is helpful to take a step back and consider the foundational elements driving digital advancements over the last half century. These elements largely run through all of the fintech applications discussed below and underscore the impact of technology-driven innovation on financial services.

The first element is the development of internet and mobile technologies that have transformed how we communicate and transact. Direct connectivity allows for disintermediation of traditional actors and processes. Basic activities that would have required manual attention and in-person interaction a half century ago are now automated and digital: completing self-checkout at a Target store; booking and staying at an Airbnb where you might never see the host; ordering a shared ride or food delivery through an app. These are often transacted on a mobile phone and even paid for with a virtual wallet or other digital payment service.

The second element is the development of exponentially more powerful and lower cost computers that allow us to innovate, analyze, and execute in ways that were unimaginable only a few decades ago. Readily available computing power allows creators to iterate on business concepts in short order, test new models, and deploy them for popular adoption in a way that manual processes could not.[76] When coupled with the scalability of internet and mobile technologies, computing-driven innovation will drive major advancements in all economic sectors, including financial services.

And the third element is the proliferation of data, which flows through and brings life to these internet and mobile channels. We live in a world increasingly fueled and facilitated by data. Consider how we move through the day from the moment we wake up: check the weather (powered by data), scroll through a customized news feed and stock market updates (powered by data), or log into the first virtual meeting of the day with colleagues from London and Hong Kong (powered by data). What all of these technology-driven applications have in common is an efficient data engine.

A critical issue now facing the financial industry is that underlying financial data is often messy, unstructured and diffuse. Legacy systems supporting this data are often outdated or incompatible with newer computing systems, making it difficult and costly to process and analyze data efficiently or without some level of manual intervention.

Many institutions use bespoke systems that do not work well with each other or across platforms, resulting in siloed and clunky data operations. The existing infrastructure does not lend itself to the potential of next generation data analytics and machine learning platforms, resulting in operational inefficiencies for financial providers and higher costs for consumers.

[76] Daniel Gorfine, Fintech Innovation: Building a 21st Century Regulator, November 2017.

Many institutions recognize the need to modernize their systems. One survey found that 94% of banking executives realize that payments competition is compelling them to offer greater choice and flexibility to customers, but almost the same portion (84%) reported being restricted by legacy infrastructure under which they simply cannot maintain the pace required to satisfy demand.[77] Additionally, 60% responded that the lack of flexibility in their legacy systems impeded their ability to implement new strategies, even though they planned to change their strategy in response to the COVID-19 pandemic.

Fintech can bridge this gap. Built on internet, mobile, computing, and data processing technologies, digitally-native fintech systems can improve core functions like data standardization and platform interoperability. Ultimately, these improvements allow fintech to provide consumers and small businesses with increased efficiency, greater choice, affordable products and services, and improved accessibility.

Take, for example, open banking -- a broad term that covers data sharing between banks and payment companies, fintech companies, and other non-bank third-party providers. Open banking, among other things, "can serve as a catalyst that gives consumers, including those in underserved communities, greater access to their bank data and to additional financial products… [and] allow third-party providers and financial institutions to make more informed decisions about the types of financial products they make available to a wider range of consumers."[78] In other words, open banking not only transacts data but enriches and learns from data to empower consumers.

The centrality of data also underscores the importance of modernized data privacy frameworks that empower consumers, support their privacy expectations, and ensure uniform and effective compliance. Forward-leaning and harmonized data privacy and use requirements will be an important policy focus and one that requires collaboration across consumers, providers, and policymakers.

There are many other ways technology creates opportunities in the financial system. Thanks to automation, computing systems can operate with reduced intermediation and produce data that is clean, accessible, and standardized. Artificial intelligence and machine learning can not only process this data efficiently but add valuable predictions and insights. Cloud services can improve scalability, including for younger companies that do not have the resources to build their own standalone infrastructures. Blockchain and distributed ledger technology can increase interoperability and transparency by creating a fixed audit trail, which helps prevent money laundering and identify suspicious transactions.

Though skeptics sometimes point to these fintech-associated concepts as trendy buzzwords, they are grounded in modern computer engineering and analytics. These are powerful solutions to refresh and reconfigure our digital financial infrastructure for the 21st century. With the development of an interconnected and fluid infrastructure that generates

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[77] Marqeta Blog, "Can banks innovate fast enough in the wake of COVID-19?", December 2020.
[78] Ribbit, Letter to the OCC.

cleaner data, enables faster processing and drives lower costs, fintech can provide efficient, transparent and inclusive products and services and simplify the financial landscape for all Americans.

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