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Financial Innovation: A World in Transition

Remarks by

Jerome H. Powell

Member

Board of Governors of the Federal Reserve System

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We live in a world defined by the rapid pace of technological change. Four of the five largest U.S. companies by market capitalization are classified as "technology companies," where the term describes the products that these companies sell and how they operate. Thanks to decades of investment in information technology, especially in electronic communication networks, consumers now expect services to be available instantly at their fingertips. This statement is true for almost every industry and every aspect of daily life, including financial transactions.

This evening, I will consider how technology is changing the delivery of retail banking and payments services. I will discuss the roles of banks, fintech companies, and other stakeholders in moving the United States forward to a better payment system. I will also review the Federal Reserve's collaboration with these payment system stakeholders in pursuing that goal. I will argue that, for policymakers as well as the private sector, the challenge is to embrace technology as a means of improving convenience and speed in the delivery of financial services, while also assuring the security and privacy necessary to sustain the public's trust. As always, the views I express here are my own.

Retail Banking Innovation

As with so many sectors of the economy, technology is transforming the retail banking sector. The banking industry has traditionally been characterized by physical branches, privileged access to financial data, and distinct expertise in analyzing such data.[1] But in today's world companies need not be bound by physical infrastructure and related overhead expenses. For example, companies can take advantage of an explosion

[1] See, e.g., Miklos Dietz, Somesh Khanna, Tunde Olanrewaju, and Kausik Rajgopal, "Cutting Through the Noise around Financial Technology," McKinsey & Company, February, 2016, www.mckinsey.com/industries/financialservices/our-insights/cutting-through-the-noise-around-financial-technology.

in available data, and leverage advances in computing power, via cloud computing, analytical tools, and off-the-shelf machine learning tools, to make sense of those data. The banking industry is adjusting to this world, and facing significant challenges to traditional banking business models.

For example, today financial technology can support access to credit through innovative approaches to gathering and analyzing data. Historically, a customer seeking a loan has provided financial statements to a bank or other traditional lending institution. More recently, the use of a fintech platform may allow a lender to quickly monitor and analyze more up-to-date data from a broader range of sources, including those outside of the traditional lending process, to verify an applicant's identity and make inferences about the applicant's overall financial health. For example, a business loan applicant could submit information such as shipping data or customer reviews as additional input to more traditional data sources. With this additional information, the bank would have a more complete picture of an applicant's day-to-day activity and overall financial capacity, and potentially a greater ability to provide credit to customers, including some who might have been otherwise denied a loan based on traditional data.

Fintech firms are also finding ways to use banks' data, in some cases without entering into an explicit partnership with the bank. With customers' permission, fintech firms have increasingly turned to data aggregators to "screen scrape" information from financial accounts. In such cases, data aggregators collect and store online banking logins and passwords provided by the bank's customers and use them to log directly into the customer's banking account. This information can be used to provide consumers with

convenient real-time snapshots of their financial information across multiple banks and accounts.

These examples highlight that there is a balance that needs to be achieved in this innovative environment.[2] On the one hand, new technologies have enabled banks and other firms to find different ways of meeting consumers' demand for speed and convenience. On the other hand, these same technologies raise new considerations about data security and safety, as well as consumer privacy and protection. Policymakers and the financial industry must assure that enhanced convenience and speed in financial services do not undermine the safety, security, and reliability of those services.

Retail Payments Innovation

Technology is also shaping changes in retail payments. As with retail banking, retail payments will need to evolve to meet consumer expectations of constant connectivity and instant access while assuring security and privacy.

It is not news that consumers' lives, including the way they pay, are now intertwined with mobile phone usage. While the overall amount of time we spend on our phones continues to grow, the duration of individual phone sessions is actually shrinking. In late 2015, Google estimated that the average mobile session lasts only 70 seconds, and may be repeated dozens of times per day.[3] As a result, payment innovators have had to create new ways to move money that are not only fast and mobile-focused, but also

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[2] See Lael Brainard, "Where Do Banks Fit in the Fintech Stack?" (speech delivered at the Northwestern Kellogg Public-Private Interface Conference on "New Developments in Consumer Finance: Research & Practice," Evanston, Illinois, April 28, 2017), https://www.federalreserve.gov/newsevents/speech/brainard20170428a.htm.

[3] "Your Guide to Winning the Shift to Mobile," Google, Micro-Moments, September 2015, https://www.thinkwithgoogle.com/marketing-resources/micro-moments/micromoments-guide-pdf-download/.

sufficiently "frictionless" that consumers can now fit commerce into these brief interludes.

This development has ushered in a world of multiple smartphone apps that allow for "instant" payments. We can use a payments app to move funds instantly to anyone who has that app.[4] Some banks have similarly collaborated to build faster payments applications that leverage their deposit account systems. And we are already moving to a world in which we need not open a special app or go to our bank's website in order to send money. Many people here will have taken an Uber or Lyft, and then paid your driver without relaunching the app, much less reaching for your wallet. Similarly, payment providers can now leverage the application programming interfaces (APIs)—essentially the protocols—of smartphone messaging services to integrate their payment tools directly into messaging applications: Nowadays, consumers can simply "attach" money while messaging a friend.

Innovation in retail payments can also offer tangible benefits to consumers beyond convenience. Improvements in security, such as our ability to authenticate consumers and detect fraudulent transactions, are also possible through innovation. For instance, mobile payments introduce a wide array of ways to authenticate a consumer's identity, including two-factor authentication codes sent via text message to the phone; biometrics, like a fingerprint or face scan; device identification information; IP address; and geolocation data. Similarly, increased access to transaction data and cloud computing resources means that we have smarter, faster computational processes—like enhanced neural networks—to detect payments that do not match a consumer's spending

[4] Cashing the funds out of the app to use for other payments, however, has traditionally taken longer.

patterns and help prevent fraudulent transactions. Both security and convenience are crucial elements for successful payments innovation. Consumers will not store their funds in a system that is not secure and will not want to transfer funds out of an otherwise secure system if the process is cumbersome.

The Role of Banks in Payments Innovation

The examples I have highlighted so far illustrate payments innovations from fintech firms and banks alike. I want to spend a moment highlighting the special role of banks in the payments process, and how banks are needed in order to create innovations that can be used broadly across the economy.

The traditional role of banks in the payments process has been to hold deposits and enable their transfer from one individual or business to another. A depositor might withdraw cash from the bank's ATM to pay a friend or write a check to make a payment. Over time, we have moved from ATMs and paper checks toward electronic payments and online payments through banking platforms—payment methods for which banks are still perceived as essential. More recently, consumer-facing technology has become front and center. At times, the payments process is so seamlessly integrated that one can forget that there is even a bank in the process, as with the Uber and Lyft example. But despite this shift in focus, payments innovation is still fundamentally about how, when, and where an individual's deposits can be held, transferred, and packaged with other information. And banks are still important players in making that happen. Even where this reality is obscured by several layers of technology, there is almost always a bank involved in consumer transactions.

Given their importance in holding and transferring funds, banks continue to have a key role to play in the design and safety of more efficient retail payment systems. Without bank participation, it would be difficult to change how funds are transferred in a way that brings pervasive benefits to consumers. For example, if the aim is to capture the speed and continuous nature of today's commerce in the payment system as a whole—as has become a focus for many countries, including the United States—it would be difficult to do so without banks allowing the transfer of their deposits on a 24x7 real-time basis. Of course, individual payment systems are already doing this for consumers within their own network. But achieving these benefits on a broad scale would be challenging without the banking system's participation, because of the large role banks have in holding and transferring funds.

All this is to say that we are at a critical juncture in the payment system's evolution, where technology is rapidly changing many facets of the payments process. Fintech firms and banks are seizing these technological changes in their own ways. But a collective and collaborative effort by all payment stakeholders will also be important as the United States works to achieve a payment system that has broad reach and can seamlessly integrate with other systems to transfer funds in a reliable, secure, and convenient manner. When we pay with cash or write a check, we don't spend a lot of time worrying about who our recipient banks with; that universality seems an appropriate standard for new payment options as well.

Strategies for Improving the U.S. Payment System

At the Federal Reserve, we believe it is important to embrace opportunities provided by technological change to improve the convenience and safety of the U.S.

payment system. About five years ago, we launched our payment system improvement initiative, which committed the Federal Reserve to working with the full range of payments system stakeholders to achieve a faster, more secure payment system. We saw that technology was transforming the nature of commerce and end-user expectations for payment services. We saw some players coming to market with innovative product offerings, but it was a fragmented approach. Meanwhile, other countries were advancing on initiatives to improve the speed and safety of their payment systems, creating a gap between the U.S. payment system and those abroad.

While the Federal Reserve does not have plenary authority over payment systems, as is the case in some other countries, we have often played an important role as a leader and catalyst for change. It was in this role that we issued a call to action asking stakeholders to come together in pursuit of a better payment system for the future—focusing on speed, security, efficiency, international payments, and collaboration.[5] I believe a collaborative approach ensures that change is designed by those whose commitment and expertise are needed to improve the payment system.

Stakeholders – including banks, fintech companies, consumer groups, regulators, and others -- answered our call to action, signing up for two task forces convened by the Federal Reserve. More than 300 stakeholders joined the Faster Payments Task Force, and around 200 joined the Secure Payments Task Force. Let me first touch upon the Faster Payments Task Force, which has recently completed its work.[6]

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[5] See Federal Reserve System, "Strategies for Improving the U.S. Payment System," January 26, 2015, https://fedpaymentsimprovement.org/wp-content/uploads/strategies-improving-us-payment-system.pdf.
[6] See Faster Payments Task Force (2017), "The U.S. Path to Faster Payments, Final Report Part Two: A Call to Action," https://fasterpaymentstaskforce.org/.

The Faster Payments Task Force's mission was to identify and assess alternative approaches for implementing a safe, ubiquitous, faster payments system in the United States. The task force began its work by developing a set of effectiveness criteria laying out desirable attributes for faster payment solutions covering the broad categories of ubiquity, efficiency, safety and security, speed, legal framework, and governance. While the task force was focused on improving speed and convenience, it also underscored the importance of safety and security by establishing 11 criteria of a total of 36 focused on those objectives.

The task force encouraged its members to submit proposals for faster payment solutions that would meet the criteria that its members had agreed upon. A diverse range of task force members rose to the challenge by submitting 16 proposals to be vetted against its criteria.[7] These proposals represent a broad universe of creative and innovative ways to deliver faster payments by embracing technology. They range in structure from solutions that use a centralized clearing and settlement mechanism to others that focus on distributed networks. Some are based on traditional assets held in transaction accounts, and others depend on new asset forms like digital currencies. The role of the task force process was not to recommend or implement a faster payment solution, but rather to offer a range of ideas to move the United States further along the path to a better payment system. We believe that the task force has successfully carried out this role.

[7] The task force recommended establishing an external Qualified Independent Assessment Team to conduct objective proposal assessments. On behalf of the task force, the Federal Reserve selected McKinsey & Company to conduct a comprehensive assessment of each faster payment solution proposal against the task force's set of criteria.

We are very grateful to the members of the Faster Payment Task Force for all of their work and for the collaborative spirit they brought to the job. But there is more to be done to advance our collective vision of a ubiquitous, real-time, secure future payment system. Last month, the Federal Reserve reaffirmed its commitment to that vision in the paper, "Federal Reserve Next Steps in the Payments Improvement Journey," which outlines refreshed strategies and tactics that we, in collaboration with the payment industry, will employ to make further progress.[8] I will mention just a few.

One of the recommendations from the Faster Payments Task Force work was to establish an industry governance framework for collaboration and decision-making on faster payments. To move forward in creating this framework, the task force established the Governance Framework Formation Team to develop, publish, and solicit public comment on a proposal for a governance framework. This work group will carry out many of the task force recommendations and the Federal Reserve, at the request of the task force, is chairing and facilitating this effort.

In addition, the Federal Reserve is considering providing settlement services—a traditional core function of a central bank—to address the future needs of a ubiquitous real-time retail payments environment. We plan to actively engage with the industry and other stakeholders to further understand gaps and requirements for real-time retail payments settlement and assess alternative models that will support needs over the long term. We also plan to explore and assess the need, if any, for other related Federal Reserve services or capabilities. In carrying out this assessment, we will be guided by

[8] See Federal Reserve System, "Federal Reserve Next Steps in the Payments Improvement Journey," September 6, 2017, https://fedpaymentsimprovement.org/wp-content/uploads/next-step-payments-journey.pdf.

current and potential market developments and challenges, as well as our long-established criteria for offering new products and services. These criteria include the need to fully recover costs over the long term; the expectation that the new service will yield clear public benefit; and the expectation that other providers alone cannot be expected to provide the service with a reasonable effectiveness, scope, and equity.[9]

The Federal Reserve will also continue to support the ongoing work of the Secure Payments Task Force. This task force has been working to educate stakeholders on payment security practices, risks, and actions that could enhance payment security. These are challenging topics, because they require stakeholders to be open and forthcoming about potential vulnerabilities if there is to be substantial progress.

The Federal Reserve will also pursue two new efforts focused on security. Early in 2018, we plan to launch a study analyzing payment security vulnerabilities. This study is similar to other research efforts that the Federal Reserve has pursued to build foundational and collective understanding of the U.S. payment system. We also plan to build upon the contributions of the Secure Payments Task Force to establish work groups focused on approaches for reducing the cost and prevalence of specific payment security vulnerabilities. In a world of ever-escalating threats to the integrity of our payment system, this collective action is needed to sustain public confidence.

These were just a few of our new initiatives. The package of next steps the Federal Reserve outlined in its recent paper confirm that we remain steadfast in our commitment to work with industry and other stakeholders to achieve a better payment system through both leadership and action.

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[9] See Board of Governors of the Federal Reserve System, "Policies: The Federal Reserve in the Payments System," revised 1990, https://www.federalreserve.gov/paymentsystems/pfs_frpaysys.htm.

Summary

Rapidly changing technology is providing a historic opportunity to transform our daily lives, including the way we pay. Fintech firms and banks are embracing this change, as they strive to address consumer demands for more timely and convenient payments. A range of innovative products that seamlessly integrate with other services is now available at our fingertips. It is essential, however, that this innovation not come at the cost of a safe and secure payment system that retains the confidence of its end users. The examples I have drawn upon today highlight that fintech firms and banks must each play a role in assuring that enhancements to convenience and speed do not undermine safety and security. More broadly, the Faster and Secure Payments Task Forces demonstrate the importance of broad and diverse stakeholder input, which are essential if the United States is to implement safe, ubiquitous real-time retail payments. Working together, we can achieve a safe and fast payments system that meets the evolving needs of consumers and our dynamic economy.