

The Fintech Revolution: A Threat to Global Banking?

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The period since the global financial crisis of 2008 has been characterized by the emergence of a broad set of tech-driven financial companies (“fintech” companies), acting in parallel with traditional banking services. Although the new players are ramping up competition, pushing digital transformation and exerting pressure on the global financial sector, their services appear to be highly complementary to the ones provided by the more established banks, which are also embracing these technologies.

The retrenchment and intensified regulation of the traditional banking system after the global financial crisis, combined with greater access to information technology and wider use of mobile devices, have allowed a new generation of firms to deliver financial services. The term “fintech” refers to this new financial industry that relies on innovative technologies and business models to provide financial services outside the traditional financial sector. Lending, payments, and cross-border transfers are some of the segments most highly affected by this development. Other traditional financial segments, such as wealth management, have also experienced high penetration of fintech entrants.

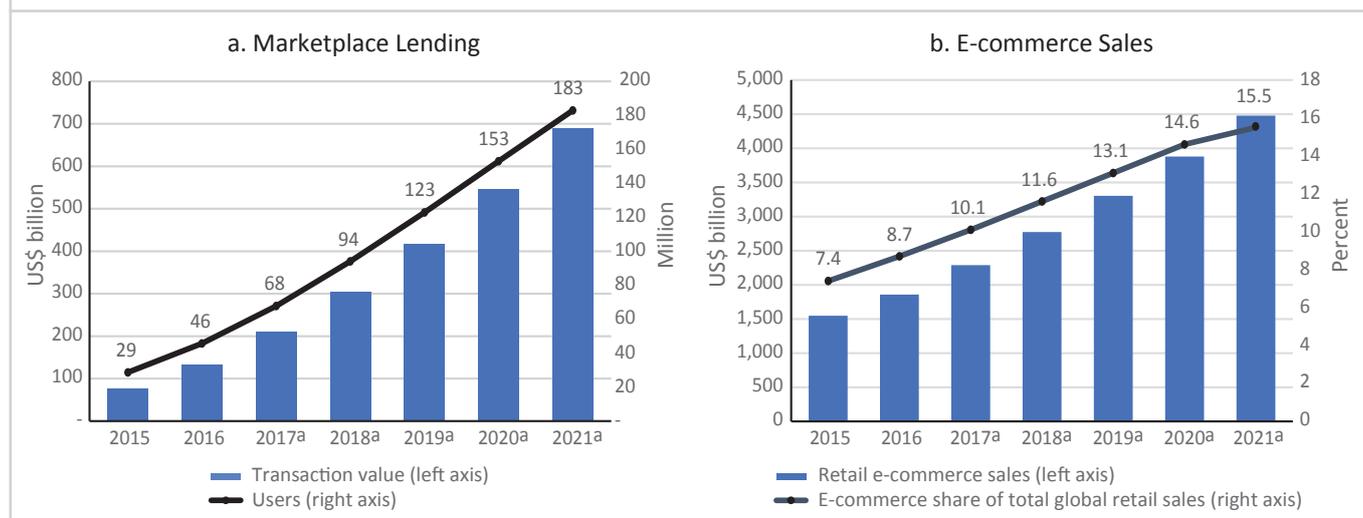
Although the data on fintech are very scant, according to some estimates at least 4,000 fintech firms were active in 2015, and more than a dozen of them were valued at over \$1 billion (The Economist 2015). Meanwhile, this trend is growing very quickly. The global investment in fintech was about \$22.3 billion in 2015—more than 12 times the investment amount in 2010 (Accenture 2016). Although the United States and the United Kingdom appear to be the world leaders in fintech investments, in terms of growth, fintech has expanded most rapidly in Asian countries (especially China and India) in recent years. Investment in Asian fintech companies accounted for 19 percent of the world’s total fintech investment in 2015, up from 6 percent in 2010.

Understanding the fintech development is important because while it can increase competition and efficiency in the financial system, it also poses new types of risks. This brief provides an overview of some of the latest fintech developments as well as their potential effects on global banks and the financial system in general.

Alternative Lending

New online platforms are offering alternative models of credit intermediation. Usually referred as marketplace or peer-to-peer (P2P) lenders, these platforms are providing increasing amounts of credit to consumers and small and medium enterprises (SMEs). Whereas some firms participate in the lending activity using their capital base (such as Kabbage), most firms simply connect lenders and borrowers and do not bear the risk of default (such as Lending Club). However, the term “peer-to-peer” is misleading because most of the loans include funding from a wide range of investors (including financial institutions). These lending platforms have no retail branches and typically provide faster loan applications and smaller shorter-term loans than banks. They also replace traditional credit scoring models with machine learning and algorithms based on big data mining to assess credit risk, accelerate processes, and lower costs. Global outstanding loans by marketplace platforms were estimated to be about

Figure 1. Global Volumes of Marketplace Lending and E-commerce



Source: eMarketer and Statista, May 2017.
a. Forecast.

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\$209 billion in 2017, with 68 million active accounts (figure 1). China, the United States, and the United Kingdom have the largest marketplace lending volumes (World Economic Forum 2015).

Another form of online credit is offered by e-commerce platforms such as Amazon, eBay, and Alibaba, which recently started to offer loans to SMEs selling goods on their platforms. The access to the transaction history of their users puts these platforms in a better position (relative to banks) to assess the risk of the loans. This type of alternative lending holds great growth potential. Retail sales by these platforms have steadily increased, reaching \$2.3 trillion in 2017, or 10 percent of total retail sales worldwide, a share that is projected to keep increasing (figure 1).

Technology firms are also tapping into supply-chain finance, pushing for the integration of financial services directly into SME value chains. Although hard to measure, supply-chain credit intermediated by new fintech providers seems to be growing very rapidly, given that supply chains are extensive and demand for this type of capital has become significant (The Economist 2017).

Payments and Transfers

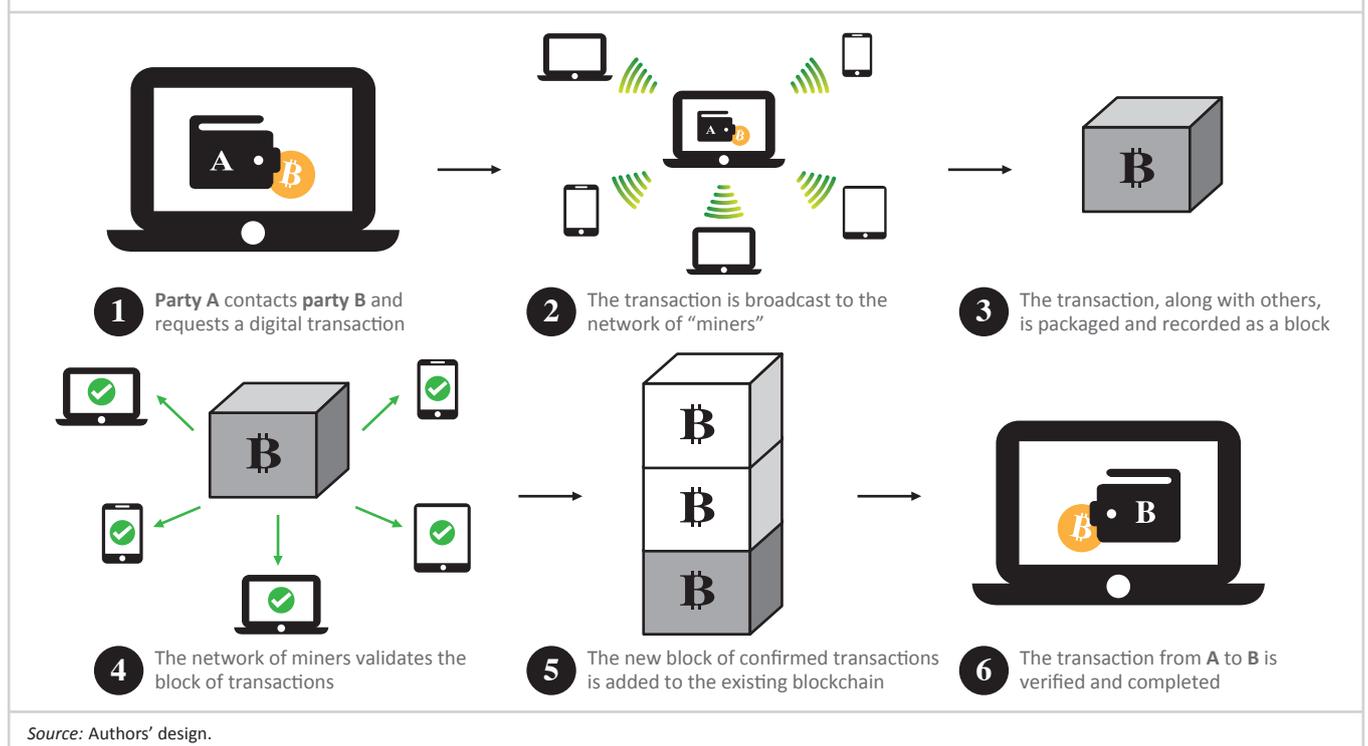
Innovations in payments and transfers are changing the way consumers engage in financial transactions. The current system of value transfer is built on several intermediaries, such as automated clearinghouses and intermediary banks (corresponding banks), which sometimes make the process costly and slow. Innovations in this area make transactions between individuals (and sometimes across economies) easier, faster, and cheaper than in the past. In the area of payments, most of the recent innovations aim to improve the user experience, leveraging on mobile devices and connectivity, although the existing payment infrastructure remains the same (such as Android Pay, Apple Pay, Square, and Stripe). In the transfers area, innovative mobile money solutions such as

M-Pesa make possible peer-to-peer transactions with mobile devices, without the need for a bank account. And new business models such as Azimo and TransferWise allow customers to send money across borders by matching transactions with other users trying to send flows in the opposite direction, thereby avoiding the high fees associated with international transfers. But the most potentially disruptive solutions in the payments and transfers arena are those based on the new blockchain technology.

Blockchain—the technology behind the most well-known cryptocurrency, bitcoin (Nakamoto 2008)—is a decentralized payment scheme that does not require a single trusted third party to validate transactions. Because the transactions are validated and logged by a network of computers, this technology upends one of the most important tasks of the traditional financial industry, which is to act as a trusted intermediary for transactions between separated (sometimes unknown) entities (figure 2). In the same way the internet has revolutionized the diffusion of information, blockchain technology can revolutionize the way in which parties send value. By providing a faster and more efficient payment infrastructure and log of transactions, this technology can be used for many financial (and nonfinancial) processes.

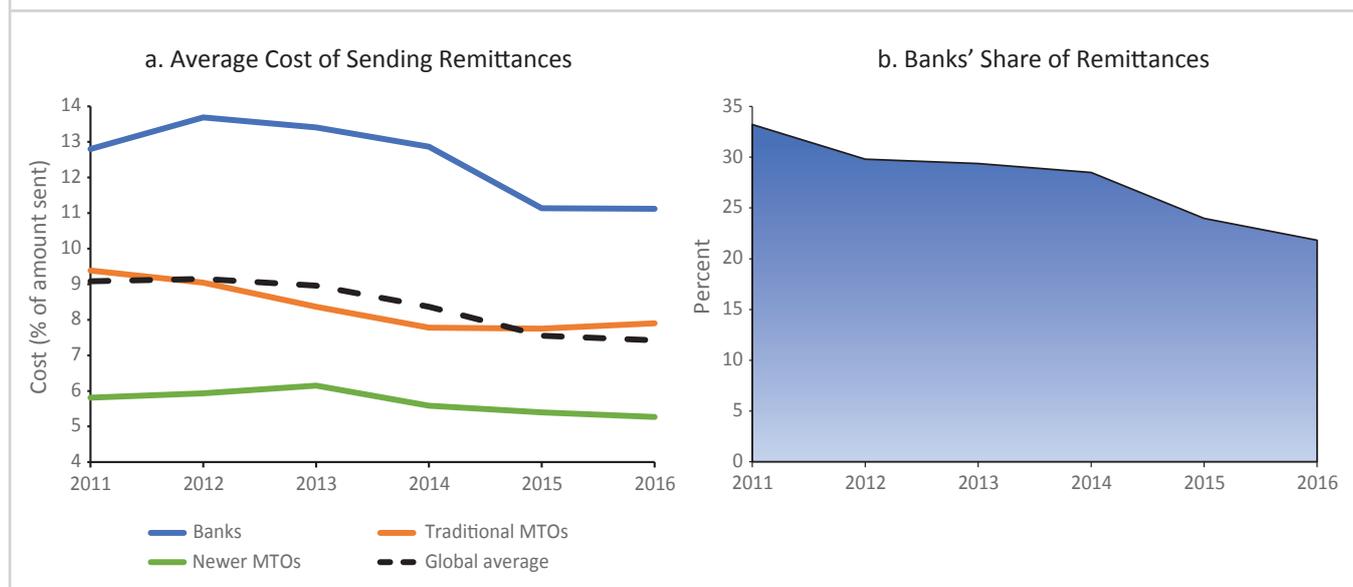
Several global banks and financial institutions are already collaborating with technology companies to further experiment with blockchain. For example, Ripple and R3 are trying to create their own blockchain network for global banks, avoiding clearinghouses and correspondent banks. The US Nasdaq stock exchange was the first to incorporate blockchain services. The Tokyo Stock Exchange, in collaboration with IBM, is also testing systems to record trades for low-transaction markets using blockchain (Adriano and Monroe 2016). Other applications of blockchain include blockchain-based property registries and smart contracts, which are self-executing contracts without the third-party interference of lawyers or courts.

Figure 2. How Blockchains Work



Source: Authors' design.

Figure 3. The Decreasing Costs of and Declining Role of Banks in Sending Remittances



Source: World Bank, "Remittance Prices Worldwide," <http://remittanceprices.worldbank.org>.

Note: Panel a shows the average total cost (as a percentage of the remittance) of sending \$200 internationally. Panel b shows the banks' market share of the remittances market. MTO = money transfer operator.

Fintech Benefits

Digital innovators are bringing increased competition and efficiency to the traditional financial sector (Philippon 2015, 2016). For example, following the increasing use of fintech providers, the cost of sending remittances has been declining (figure 3), while the speed of transactions has been increasing. This holds special importance for developing countries because remittances constitute one of the biggest flows of funds from the developed to the developing world. The global flow of remittances was estimated to exceed \$601 billion in 2015, and developing countries received an estimated \$441 billion of that total (World Bank 2016).

Importantly, the development of fintech also promotes financial inclusion for consumers and SMEs. Historically, there has been a wide gap between the financial needs of households and businesses in developing countries and the set of financial products available to them. The banking sector has constrained lending to this segment, among other reasons, because of the high costs relative to the small transaction values involved and the difficulties lenders have in identifying and assessing the risk of potential borrowers. Mobile money platforms allow unbanked consumers, with basic mobile phones, to make and receive payments much faster and less expensively than in the recent past. They also provide the infrastructure and generate the digitalized data that can be used to create and tailor new financial offerings for the financially excluded. An example is M-Shwari in Kenya, which leverages the mobile money infrastructure and digital information of M-Pesa to make credit-scoring decisions (CGAP 2015). Moreover, low-income consumers and SMEs are the user targets of most marketplace lenders, which typically arrange small loans for these financially constrained segments. Lastly, one of the benefits of the blockchain technology for financial inclusion is its potential to reform and improve property ownership through blockchain registries, which would generate proof of collateral (an important problem in developing nations) and thus improve access to credit.

Risks and Regulation

Despite the potential benefits, fintech services also pose new types of risks. The lack of safety nets in the business models, misuse of personal data, difficulties in identifying customers, and electronic fraud are among the main vulnerabilities of the new digital financial practices. Because most of the P2P lending platforms do not hold the loans originated in their balance sheets, the profitability of their businesses is highly dependent on the number of loans they intermediate and might evaporate during economic recessions. Banks covered by deposit insurance schemes are better equipped to cope with economic downturns (Demirgüç-Kunt, Kane, and Laeven 2014). As for payments, the anonymity, speed, and global reach of some crypto-currencies (namely, bitcoin) can facilitate tax evasion, money laundering, and the funding of illegal activities. For example, the "Silkroad" was an anonymous e-commerce platform that allowed for any type of product (including illegal ones) to be traded through the use of Tor (an anonymous browser) and bitcoin (an anonymous form of payment). Another potential problem of the use of cryptocurrencies, beyond speculative investments, is their very high price volatility. The daily standard deviation of the price of bitcoin in 2017 was \$4,077 (<https://blockchain.info>). This high price volatility makes it very difficult the use of cryptocurrencies as alternative means of transaction, which could be useful for international transfers, especially for unbanked population segments.

At the center of the policy debate is how this new area of finance should be regulated and supervised. Lending discrimination against some customers, disclosure requirements for SMEs, and the sharing of customer data are some of the main areas of concern for U.S. regulators with respect to the new online platforms (Politico 2016). Moreover, consumer protection and education measures are much needed because many fintech services serve segments of more vulnerable customers (some of whom are accessing financial services for the first time). Another area of concern is the cross-border

activity of the new digital financial services. Although many fintech companies operate globally or offer digital products involving multiple countries, financial regulation remains region-specific and highly fragmented. Therefore, it is not clear which country's laws should prevail.

Excessive regulation might not be desirable because it could be deadly for fintech start-ups. Understating this trade-off, regulators in some countries are developing regulatory sandboxes to manage the transition to a new landscape. This approach has two aims. On the one hand, it allows fintech companies to live test their services with real customers while facing a low level of regulation during a predefined period. On the other hand, it helps financial authorities better understand the functioning of the new services as well as their advantages and risks, ensuring that appropriate consumer protection safeguards are built into the new products and services before they reach the mass market (Financial Conduct Authority 2015). The United Kingdom has launched its sandbox, and other economies, such as Australia, Singapore, and Hong Kong SAR, China, are pursuing similar initiatives. The sandbox strategy has also been contemplated by U.S. regulators (Wall Street Journal 2016). The new digitally enabled methods could also be used to address compliance requirements and to monitor digital financial services ("regtech").

Outlook and Conclusion

Despite the rapid expansion of fintech companies, so far, the level of disruption seems to have been low. Only about 1 percent of consumer banking revenue in North America had been disrupted by fintech players by 2016 (Citigroup 2016). The low level of disruption to date is partly driven by the complementarity between the services provided by many fintech providers and traditional banks. That is, in many instances, the new fintech companies complement (rather than substitute for) traditional banking, bringing alternative sources of external finance to consumers and SMEs. For example, as mentioned, online lending is an alternative for the type of borrower usually underserved by traditional banks. This is of special relevance not only for households and

firms in the developing world (where the banking system is often underdeveloped), but also for underserved borrowers in high-income countries (Roure, Pelizzon, and Tasca 2016; Blaseg and Koetter 2016). Moreover, because a bank account is needed to perform many of the fintech services, it would be hard to imagine fintech companies overtaking banks completely and becoming involved in the current accounts niche. There will always be need for a highly regulated service that allows households and firms to keep their money safe and accessible. Banks seem to be the players best suited for that role.

The trend toward digitalization and technological innovation will likely reshape the global financial sector and the ways in which financial companies interact with their customers. The proliferation of mobile devices, new demographics, and the rise of fintech providers are the driving forces in this development, fueling the emergence of new solutions and products that better address customer needs by increasing accessibility, speed, and convenience. As a result, customer expectations regarding financial services are increasing, and banks will find it difficult to control all parts of the value chain using the traditional business models.

Some global banks appear to be shifting their distribution channels from brick and mortar operations to nonphysical channels, which will probably be the main channel of interaction between banks and consumers in the future. Banks also seem to be shifting toward viewing fintech companies as partners and enablers rather than disruptors and competitors (Economist Intelligence Unit 2015). Incumbents are realizing the need to take advantage of fintech capabilities to grow business, retain existing customers, and attract new ones, some of whom were previously unbanked. Meanwhile, without access to a client base, client trust, capital, licenses, and a robust global infrastructure, the new fintech companies will discover that there are limits to their growth. Collaboration between incumbents and new players is already taking place, and incumbent financial institutions seem to be pouring increasing amount of investments into the fintech sector through fintech acquisitions, investment funds, incubators, and accelerators.

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