



## Testimony

Before the Committee on Banking,  
Housing, and Urban Affairs, Senate

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# FINANCIAL TECHNOLOGY

## Information on Subsectors and Regulatory Oversight

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Accessible Version

# GAO Highlights

Highlights of [GAO-17-806T](#), a testimony before the Committee on Banking, Housing and Urban Affairs, U.S. Senate

## Why GAO Did This Study

Advances in technology and the widespread use of the Internet and mobile communication devices have helped fuel the growth in fintech products and services. In April 2017, GAO issued the first of a series of planned reports on the fintech industry that describes four commonly referenced subsectors of fintech and their regulatory oversight.

This testimony summarizes the findings of that report and describes (1) commonly referenced fintech subsectors, including what it is and how it works; (2) potential benefits and risks of these subsectors, including recent industry trends; (3) and regulatory oversight of these subsectors.

This statement is based on our April 2017 report on the fintech industry ([GAO-17-361](#)). For that report, GAO conducted background research and a literature search of publications from agencies and other knowledgeable parties. GAO also reviewed guidance, final rulemakings, initiatives, and enforcement actions from agencies. GAO interviewed representatives of federal agencies, including the federal prudential regulators, state supervision agencies, trade associations, and other knowledgeable parties.

View [GAO-17-806T](#). For more information, contact Lawrence Evans, Jr. at (202) 512-8678 or [evansl@gao.gov](mailto:evansl@gao.gov)

September 12, 2017

## FINANCIAL TECHNOLOGY

### Information on Subsectors and Regulatory Oversight

## What GAO Found

The financial technology (fintech) industry is generally described in terms of subsectors that have or are likely to have the greatest impact on financial services, such as credit and payments. Commonly referenced subsectors associated with fintech include marketplace lending, mobile payments, digital wealth management, and distributed ledger technology.

- **Marketplace lenders** connect consumers and small businesses seeking online and timelier access to credit with individuals and institutions seeking profitable lending opportunities. Marketplace lenders use traditional and may use less traditional data and credit algorithms to underwrite consumer loans, small business loans, lines of credit, and other loan products.
- **Mobile payments** allow consumers to use their smartphones or other mobile devices to make purchases and transfer money instead of relying on the physical use of cash, checks, or credit and debit cards. There are different ways to make mobile payments, including the use of a mobile wallet.
- **Digital wealth management platforms** use algorithms based on consumers' data and risk preferences to provide digital services, including investment and financial advice, directly to consumers. Digital wealth management platforms provide services including portfolio selection, asset allocation, account aggregation, and online risk assessments.
- **Distributed ledger technology** was introduced to facilitate the recording and transferring of virtual currencies, specifically using a type of distributed ledger technology, known as blockchain. Distributed ledger technology has the potential to be a secure way of conducting transfers of digital assets in a near real-time basis potentially without the need for an intermediary.

Fintech products and services offer various potential benefits including increased access to financial services, lower costs, increased speed of service, and convenience. Fintech products and services also pose various potential risks including data security and privacy risks, risks posed by the use of alternative data, risk of human error or confusion, and risk posed by incomplete or inaccurate data. Trends have emerged across the fintech landscape such as the creation of partnerships between traditional financial institutions and fintech firms, formation of hybrid services, and establishment of self-regulatory efforts.

Regulation of the commonly referenced subsectors depends on the extent to which the firms provide a regulated service and the format in which the services are provided, with responsibilities fragmented among multiple entities that have overlapping authorities. Federal oversight authorities that apply to regulated activities generally include risk management oversight related to services provided to federally regulated depository institutions, consumer protection oversight, and securities and derivatives markets oversight. Some agencies have taken a number of steps to understand and monitor the fintech industry. State licensing laws and oversight mechanisms, including consumer protection, vary by state. Officials from the Conference of State Bank Supervisors we spoke with noted that the states are working on developing tools that can facilitate compliance with state-by-state licensing mechanisms.

Chairman Crapo, Ranking Member Brown, and Members of the Committee

Thank you for the opportunity to be here today to discuss the financial technology (fintech) landscape. Advances in technology and the widespread use of the Internet and mobile communication devices have helped fuel the growth in fintech products and services. Consumer access to these new technologies has resulted in changes in their preferences and expectations regarding how they conduct financial transactions, such as using their smartphones to make payments or purchases. Fintech products and services include small business financing, education refinancing, mobile wallets, virtual currencies, and platforms to connect investors and start-ups.

My remarks are based on our April 2017 report on the fintech industry.<sup>1</sup> Specifically, in our report we provided information on four commonly referenced subsectors of the fintech industry, including what it is and how it works; potential benefits and risks; industry trends; and regulation and oversight. The four commonly referenced subsectors of fintech described in the report were marketplace lending; mobile payments; digital wealth management; and distributed ledger technology.

For our April 2017 report, we conducted background research and a literature search of publications from various sources including regulators, industry groups, and other knowledgeable parties. We also reviewed prior GAO reports on person-to-person lending, virtual currencies, and financial regulation.<sup>2</sup> We conducted interviews with agencies, industry groups, and other knowledgeable parties to identify information for each subsector and to obtain information on fintech oversight and regulation at the federal and state levels. We reviewed guidance, final rulemakings, initiatives, and enforcement actions from agencies. We also attended and summarized fintech-related forums held by federal agencies and others.

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<sup>1</sup>GAO, *Financial Technology: Information on Subsectors and Regulatory Oversight*, [GAO-17-361](#) (Washington, D.C.: April 19, 2017).

<sup>2</sup>See GAO, *Person-to-Person Lending: New Regulatory Challenges Could Emerge as the Industry Grows*, [GAO-11-613](#) (Washington, D.C.: July 7, 2011); and *Virtual Currencies: Emerging Regulatory, Law Enforcement, and Consumer Protection Challenges*, [GAO-14-496](#) (Washington, D.C.: May 29, 2014); GAO, *Financial Regulation: Complex and Fragmented Structure Could be Streamlined to Improve Effectiveness*, [GAO-16-175](#) (Washington, D.C.: Feb. 25, 2016).

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## Commonly Referenced Fintech Subsectors are Marketplace Lending, Mobile Payments, Digital Wealth Management, and Distributed Ledger Technology

*Marketplace lending.* Marketplace lenders connect consumers and small businesses seeking online and timelier access to credit with individuals and institutions seeking profitable lending opportunities. In addition to traditional credit data, such as credit scores or debt repayment history, marketplace lenders may also use less traditional (alternative) data, such as monthly cash flow or online customer reviews, and credit algorithms to underwrite consumer loans, small business loans, lines of credit, and other loan products. Although a number of marketplace lending models exist, publications we reviewed highlighted two common models: direct lenders and platform lenders.<sup>3</sup> Direct lenders, also known as balance sheet lenders, use capital obtained from outside sources to fund loans and often hold loans on their balance sheet. Platform lenders partner with depository institutions to originate loans that are then purchased by the lender or by an investor through the platform.

*Mobile payments.* Mobile payments allow consumers to use their smartphones or other mobile devices to make purchases and transfer money instead of relying on the physical use of cash, checks, or credit and debit cards. There are different ways to make mobile payments, including the use of a mobile wallet. Using a mobile wallet, consumers can store payment card information and other information on their mobile devices that is often needed to complete a payment for later use.<sup>4</sup> Consumers may use mobile wallets to make payments to other consumers, referred to as person-to-person payments, or to businesses,

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<sup>3</sup>Congressional Research Service, *Marketplace Lending: Fintech in Consumer and Small-Business Lending*, September 6, 2016; Department of the Treasury, *Opportunities and Challenges in Online Marketplace Lending*, May 10, 2016; Alan McQuinn, Weining Guo, and Daniel Castro, *Policy Principles for Fintech*, Information Technology & Innovation Foundation, October 2016; S&P Global Market Intelligence, *An Introduction to Fintech: Key Sectors and Trends*, October 2016; and S&P Global Market Intelligence, *2016 U.S. Digital Lending Landscape* (Charlottesville, Va.: December 2016).

<sup>4</sup>In a mobile wallet, consumers can enter payment information from debit and credit cards, gift cards, and prepaid cards. Consumers can also store other information often needed to complete a payment, such as shipping address, e-mail, and phone number.

referred to as person-to-business payments, either in mobile applications, through mobile browsers, or in person at a store's point-of-sale terminal. In addition, some mobile payment providers allow individuals to create accounts to receive and make payments.

*Digital wealth management.* Digital wealth management platforms, including robo-advisors, use algorithms based on consumers' data and risk preferences to provide digital services, including investment and financial advice, directly to consumers. Digital wealth management platforms provide services including portfolio selection, asset allocation, account aggregation, and online risk assessments.<sup>5</sup> Digital wealth management firms incorporate technologies into their portfolio management platforms primarily through the use of algorithms designed to optimize wealth management services. Fully automated platforms have features that let investors manage their portfolios without direct human interaction. Digital wealth management platforms typically collect information on a customer using online questionnaires, help customers select a risk profile, and suggest investment strategies. Adviser-assisted digital wealth management platforms combine a digital client portal and investment automation with a virtual financial adviser typically conducting simple financial planning and periodic reviews over the phone.

*Distributed ledger technology.* Distributed ledger technology was introduced to facilitate the recording and transferring of virtual currencies, specifically using a type of distributed ledger technology, known as blockchain.<sup>6</sup> Distributed ledger technology has the potential to be a secure way of conducting transfers of digital assets in a near real-time

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<sup>5</sup>BlackRock, *Digital Investment Advice: Robo Advisors Come of Age*, September 2016, <https://www.blackrock.com/corporate/en-at/literature/whitepaper/viewpoint-digital-investment-advice-september-2016.pdf>; Financial Industry Regulatory Authority, *Report on Digital Investment Advice*, March 2016, <http://www.finra.org/sites/default/files/digital-investment-advice-report.pdf>; Gauthier Vincent, Rohit Gera, Deloitte, *Digital Disruption in Wealth Management Why Established Firms Should Pay Attention To Emerging Digital Business Models For Retail Investors*, 2014.

<sup>6</sup>See GAO, *Virtual Currencies: Emerging Regulatory, Law Enforcement, and Consumer Protection Challenges*, [GAO-14-496](#) (Washington, D.C.: May 29, 2014).

basis potentially without the need for an intermediary.<sup>7</sup> Distributed ledger technology involves a distributed database maintained over a network of computers connected on a peer-to-peer basis, such that network participants can share and retain identical, cryptographically secured records in a decentralized manner.<sup>8</sup> A network can consist of individuals, businesses, or financial entities. An important feature of distributed ledger technology is that transactions added to a ledger are validated by network participants through a process referred to as a consensus mechanism.<sup>9</sup> Consensus mechanisms incorporate security features such as cryptography and digital signatures. Stakeholders have identified potential uses for distributed ledger technology in the financial service industry through the clearing and settlement of financial transactions, including

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<sup>7</sup>An intermediary can include financial institutions (such as banks, broker/dealers, and other institutions that interact with the end-users of a financial transaction) and infrastructures (such as payment, clearing, and settlement systems for funds, securities, and derivatives). See David Mills, Kathy Wang, Brendan Malone, Anjana Ravi, Jeff Marquardt, Clinton Chen, Anton Badev, Timothy Brezinski, Linda Fahy, Kimberley Liao, Vanessa Kargenian, Max Ellithorpe, Wendy Ng, and Maria Baird (2016), "Distributed ledger technology in payments, clearing, and settlement," Finance and Economics Discussion Series 2016-095, Washington: Board of Governors of the Federal Reserve System, <https://doi.org/10.17016/FEDS.2016.095>; Board of Governors of the Federal Reserve System, *Consumer Compliance Outlook, Fintech Special Edition*, 3rd ed. (Philadelphia, Pa.: 2016).

<sup>8</sup>Financial Industry Regulatory Authority, *Distributed Ledger Technology: Implications of Blockchain for the Securities Industry*, January 2017.

<sup>9</sup>A consensus mechanism is the way in which a majority or all network members agree on the value of a proposed transaction, which is then updated to the ledger. There are different mechanisms that can build consensus using algorithms.

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international money transfers, private trades in the equity market, and insurance claims processing and management.<sup>10</sup>

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## Fintech Products and Services Offer Potential Benefits and Pose Potential Risks to Consumers

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### Potential benefits

*Increased access to financial services.* Digital wealth management platforms and marketplace lending providers may offer increased access to financial services to previously underserved populations. Digital wealth management platforms may expand access to underserved segments such as customers with smaller asset amounts than those of traditional consumers of wealth management services.<sup>11</sup> Traditional wealth management firms may require minimum investment amounts of \$250,000, whereas some digital platforms require a minimum of

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<sup>10</sup>David Mills, Kathy Wang, Brendan Malone, Anjana Ravi, Jeff Marquardt, Clinton Chen, Anton Badev, Timothy Brezinski, Linda Fahy, Kimberley Liao, Vanessa Kargenian, Max Ellithorpe, Wendy Ng, and Maria Baird (2016), "Distributed ledger technology in payments, clearing, and settlement," Finance and Economics Discussion Series 2016-095, Washington: Board of Governors of the Federal Reserve System, <https://doi.org/10.17016/FEDS.2016.095>; Financial Industry Regulatory Authority, *Distributed Ledger Technology: Implications of Blockchain for the Securities Industry*, January 2017; Financial Stability Oversight Council *2016 Annual Report* (Washington, D.C.: June 21, 2016); Alan McQuinn, Weining Guo, and Daniel Castro, *Policy Principles for Fintech*, Information Technology & Innovation Foundation, October 2016; United Kingdom Government Office for Science, *Distributed Ledger Technology: beyond block chain*, December 2015; United States Postal Service, Office of Inspector General, *Blockchain Technology: Possibilities for the U.S. Postal Service*, Report No. RARC-WP-16-011, May 23, 2016; World Economic Forum, *The Future of Financial Infrastructure: An ambitious look at how blockchain can reshape financial services*, August 2016, accessed January 11, 2017, <https://www.weforum.org/reports/the-future-of-financial-infrastructure-an-ambitious-look-at-how-blockchain-can-reshape-financial-services>.

<sup>11</sup>Deloitte, *Robo Advisors: Capitalizing on a growing opportunity*, 2015; EY, *Advice Goes Virtual: How new Digital Investment Services Are Changing The Wealth Management Landscape*, 2015; Accenture, *The Rise of Robo-Advice: Changing the Concept of Wealth Management*, 2015; BlackRock, *Digital Investment Advice: Robo Advisors Come of Age*, September 2016.

approximately \$500 or no minimum at all.<sup>12</sup> Similarly, marketplace lending may expand credit access to underserved populations that may not meet traditional lending requirements or that seek smaller loans than those that banks traditionally offer.

*Lower costs.* Marketplace lending providers and digital wealth management platforms may offer consumers access to lower cost products. Marketplace lenders' online structure may reduce overhead costs because not all firms have brick-and-mortar locations. In addition, the algorithms used by marketplace lenders to underwrite credit decisions may result in lower underwriting costs when compared to banks' underwriting costs. Also, digital wealth management platforms may charge lower fees for services such as investment trade fees than traditional wealth management firms.<sup>13</sup>

*Speed.* Marketplace lending, mobile payments, and distributed ledger technology may offer consumers access to faster services. According to an SBA publication, some marketplace lenders can provide loans in as little as 24 hours.<sup>14</sup> An industry organization we spoke with said that faster service is beneficial to small businesses that may need quick access to credit in an emergency, such as a restaurant that needs its oven or refrigerator repaired to continue operations. Mobile payments can also streamline the checkout time for consumers. For example, consumers can wave their smartphone in front of an in-store terminal to make a purchase, which can be faster than swiping a credit or debit card. Distributed ledger technology may also offer increased service speed as it has the potential to reduce settlement times for securities transactions by

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<sup>12</sup>Bloomberg QuickTake, *Robo-advisors: They Invest by Algorithm But Don't Return Calls*, June 7, 2016, accessed December 14, 2016, <https://www.bloomberg.com/quicktake/robo-advisers>.

<sup>13</sup>Securities and Exchange Commission Office of Investor Education and Advocacy, *Investor Bulletin: Robo-Advisers*, February 23, 2017, [https://www.sec.gov/oiea/investor-alerts-bulletins/ib\\_robo-advisers.html](https://www.sec.gov/oiea/investor-alerts-bulletins/ib_robo-advisers.html); Qplum, *What is Robo-Advising* (Jersey City, NJ: May 5, 2016).

<sup>14</sup>Miriam Segal, Small Business Administration Office of Advocacy, *Peer-to-Peer Lending: A Financing Alternative for Small Businesses*, Issue Brief Number 10 (Washington, D.C.: Sept. 10, 2015).

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facilitating the exchange of digital assets during the same period of time as the execution of a trade.<sup>15</sup>

*Convenience.* Mobile payments and digital wealth management platforms offer convenience to consumers. Mobile wallets offer consumers the convenience of instant transactions without having to enter credit card information, PIN numbers, and shipping addresses each time they make a purchase.<sup>16</sup> Digital wealth management platforms also offer convenience since regardless of location or the time of day, investors with a smartphone, tablet, or computer can make changes to their data and preference inputs, send instructions, access their portfolios, and receive updated digital advice.<sup>17</sup>

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## Potential risks

*Data security and privacy risks.* Data security and privacy risks may exist in the mobile payments, distributed ledger technology, and digital wealth management sectors. Mobile payment technologies pose potential data security risks which include the possibility of payment and personal data being lost or vulnerable to theft because of consumers' reliance on the use of smartphones or other mobile communication devices. Distributed ledger technology also poses potential security risk. According to a Financial Industry Regulatory Authority report, given that distributed ledger technology involves sharing of information over a network, it poses security-related risks.<sup>18</sup> The Financial Stability Oversight Council (FSOC) also noted that market participants have limited experience working with distributed ledger systems, and it is possible that operational vulnerabilities associated with such systems may not become apparent

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<sup>15</sup>Financial Industry Regulatory Authority, *Distributed Ledger Technology: Implications of Blockchain for the Securities Industry*, January 2017; S&P Global Market Intelligence, *An introduction to fintech: Key Sectors and trends*, October 2016.

<sup>16</sup>Board of Governors of the Federal Reserve System, *Consumers and Mobile Financial Services 2014*, March 2014; Alan McQuinn, Weining Guo, and Daniel Castro, *Policy Principles for Fintech*, Information Technology & Innovation Foundation, October 2016; and Krista Becker, *Mobile Phone: The New Way to Pay?* Federal Reserve Bank of Boston Emerging Payments Industry Briefing, February 2007.

<sup>17</sup>According to Securities and Exchange Commission (SEC) staff, the instructions inputted into the platform may not be carried out until the relevant markets open. BlackRock, *Digital Investment Advice: Robo Advisors Come of Age*, September 2016.

<sup>18</sup>Financial Industry Regulatory Authority, *Distributed Ledger Technology: Implications of Blockchain for the Securities Industry*, January 2017.

until they are deployed at scale.<sup>19</sup> Digital wealth management platforms pose potential privacy risk since their use requires customers to enter personal information. According to an investor alert issued by the Securities and Exchange Commission (SEC) and Financial Industry Regulatory Authority staff, digital wealth management platforms may be collecting and sharing personal information for purposes unrelated to the platform. The alert cautions customers to safeguard personal information.<sup>20</sup>

*Use of alternative data in credit decisions.* Use of alternative data in credit decisions may carry the risk of potential fair lending violations. Unlike traditional lending companies that look at a person's credit reports, some marketplace lenders also take into account or have considered using alternative data, such as utilities, rent, telephone bills, and educational history, during the underwriting process.<sup>21</sup> According to Treasury, data-driven algorithms used by marketplace lenders, that incorporate the use of alternative data, carry the risk for potential fair lending violations.<sup>22</sup> According to staff from the Federal Trade Commission (FTC), marketplace lenders must ensure that their practices meet fair lending and credit reporting laws.<sup>23</sup> The use of alternative data also introduces the risk that the data used are inaccurate and concerns that consumers may not have sufficient recourse if the information being used is incorrect.

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<sup>19</sup>Financial Stability Oversight Council, *2016 Annual Report* (Washington, D.C.: June 21, 2016).

<sup>20</sup>Securities and Exchange Commission Office of Investor Education and Advocacy and Financial Industry Regulatory Authority, *Investor Alert: Automated Investment Tools*, May 8, 2015.

<sup>21</sup>Consumer Financial Protection Bureau, Request for Information Regarding Use of Alternative Data and Modeling Techniques in the Credit Process, [http://files.consumerfinance.gov/f/documents/20170214\\_cfpb\\_Alt-Data-RFI.pdf](http://files.consumerfinance.gov/f/documents/20170214_cfpb_Alt-Data-RFI.pdf).

<sup>22</sup>Department of the Treasury, *Opportunities and Challenges in Online Marketplace Lending*, May 10, 2016.

<sup>23</sup>Federal Trade Commission, *Fintech Forum: A closer look at marketplace lending*, <https://www.ftc.gov/news-events/blogs/business-blog/2016/08/fintech-forum-closer-look-marketplace-lending>.

*Human error and confusion.* According to publications we reviewed, mobile payment methods can create operational risk for human error.<sup>24</sup> For example, consumers can deposit or send money to the wrong person when using person-to-person payments, if, for example, they type in the wrong phone number. Mobile payment methods can also increase consumer confusion regarding protections based on the underlying funding source. According to the Federal Deposit Insurance Commission (FDIC), consumers may not understand which regulators supervise the parties providing mobile payments and may be unsure which consumer protections apply.<sup>25</sup>

*Insufficient or incomplete information from customers.* In the case of digital wealth management, a lack of human interaction could result in investment decisions based on insufficient or incomplete customer information. A traditional wealth manager is able to ask and clarify questions and request follow-up information to capture a customer's full finances and goals. However, automated responses may not allow a digital wealth management platform to capture a full picture of the customer's circumstances or short-term goals, for example, whether the customer may need investment money to buy a new home. If the customer does not understand a question, or does not answer it completely, the platform may not assess customers' full financial circumstances; for example, if a customer provides conflicting information on his or her finances, the digital wealth management platform may not have a full picture of the client's financial condition or a customer may end up with an undesired portfolio.<sup>26</sup>

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<sup>24</sup>Federal Deposit Insurance Corporation, Supervisory Insights, *Mobile Payments: An Evolving Landscape*, Winter 2012; Professor Mark E. Budnitz, *Pew Charitable Trusts, The Legal Framework Of Mobile Payments: Gaps, Ambiguities, and Overlap*, February 10, 2016.

<sup>25</sup>Federal Deposit Insurance Corporation, Supervisory Insights, *Mobile Payments: An Evolving Landscape*, Winter 2012.

<sup>26</sup>Securities and Exchange Commission Office of Investor Education and Advocacy and Financial Industry Regulatory Authority, *Investor Alert: Automated Investment Tools*, May 8, 2015, accessed January 3, 2017, <https://www.sec.gov/oiea/investor-alerts-bulletins/autolistingtoolshtm.html>; Financial Regulatory Authority, *Report on Digital Investment Advice*, March 2016.

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## Trends Have Emerged in the Fintech Landscape, Some of Which Cut Across Multiple Sectors

*Partnerships.* Partnerships have started to form between traditional financial institutions and fintech providers. According to Treasury, some marketplace lenders have sought partnerships with traditional banks and community development financial institutions (CDFI) in various models.<sup>27</sup> According to a Congressional Research Service report, in a white label partnership, a traditional bank sets underwriting standards, originates the loan, and holds the loan once issued.<sup>28</sup> The bank can integrate a marketplace lending firm's technology services to originate the loan. In referral partnerships, banks refer customers who do not meet a bank's underwriting standards, or who are seeking products the bank does not offer, to a marketplace lender. Partnerships have also formed in the mobile payments space. Some industry stakeholders we spoke with said that the relationship between banks and mobile payment firms has evolved into more partnerships because banks and mobile payment firms recognize mutual benefits. For example, mobile payment firms can benefit from banks' experience with regulatory compliance and banks can remain competitive by meeting the needs of their customers. Distributed ledger technology related partnerships have developed in which financial institutions have joined a multiparty consortium or announced partnerships to examine the technology's potential.

*Hybrid services.* Hybrid services have formed in the digital wealth management and marketplace lending sectors. Hybrid services have evolved that combine traditional wealth management and digital wealth management. For example, in 2015 one large traditional investment firm implemented a service that offers investors an option of consulting with a human advisory representative in addition to its automated investment platform. Traditional wealth management firms also offer digital wealth management services. For example, in 2015, one large wealth

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<sup>27</sup>CDFI certifications are issued by Treasury to financial institutions serving economically distressed communities and low-income people across the country. CDFI certification allows financial institutions to apply for technical assistance and financial assistance awards, as well as training provided by the CDFI Fund.

<sup>28</sup>Congressional Research Service, *Marketplace Lending: Fintech in Consumer and Small-Business Lending*, September 6, 2016.

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management firm developed a product, available to customers with \$5,000 in savings, and a large bank launched a robo-advisor within its online investment platform. Hybrid models have also emerged in marketplace lending. For example, some direct lenders have developed hybrid models, selling some whole loans to institutional investors while retaining servicing responsibilities.

*Self-regulatory efforts.* A number of self-regulatory marketplace lending efforts were established with the intent of developing responsible innovation and mitigating and reporting risks to potential borrowers seeking marketplace lending products. For example, the Marketplace Lending Association was established in 2016 with one of its goal being to support responsible growth in the marketplace lending sector. However, limited information is available on the impact of these efforts.

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## Regulatory Oversight of Commonly Referenced Fintech Subsectors Is Complex and Spread among Federal and State Entities

Regulation of the commonly referenced subsectors depends on the extent to which the firms provide a regulated service and the format in which the services are provided, with responsibilities fragmented among multiple entities that have overlapping authorities.<sup>29</sup> Federal oversight authorities that apply to regulated activities generally include risk management oversight related to services provided to federally regulated depository institutions, consumer protection oversight, and securities and derivatives markets oversight. State licensing laws and oversight mechanisms, including consumer protection, vary by state.

Some agencies have taken a number of steps to understand and monitor the fintech industry. They have published papers for industry comment, established agency offices to perform outreach with fintech firms, organized forums, clarified authority for considering a special-purpose national bank charter for fintech firms, issued guidance, and formed working groups, among other activities. Specifically, in October 2016, the Consumer Financial Protection Bureau (CFPB) released its first report on

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<sup>29</sup>For additional information on the U.S. financial regulatory structure, see GAO, *Financial Regulation: Complex and Fragmented Structure Could Be Streamlined to Improve Effectiveness*, [GAO-16-175](#) (Washington D.C.: Feb. 25, 2016).

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Project Catalyst, the project to encourage consumer-friendly innovation in markets for consumer financial products and services.<sup>30</sup> In December 2016, the Office of the Comptroller of the Currency (OCC) published a paper discussing issues related to chartering special-purpose national banks and solicited public comment to help inform its path moving forward.<sup>31</sup>

Officials from the Conference of State Bank Supervisors we spoke with noted that the states are working on developing tools that can facilitate compliance with state-by-state licensing mechanisms, such as the Nationwide Mortgage Licensing and Registry System (NMLS). NMLS is intended to enable firms to complete one record to apply for state licensing that fulfills the requirements of each state, for states that participate in the system.<sup>32</sup> As mentioned previously, a number of self-regulatory efforts have emerged with the intent of developing responsible innovation and mitigating and reporting risks to potential borrowers seeking marketplace lending products.

*Marketplace Lending.* Regulation of marketplace lenders is largely determined by the lenders' business model and the borrower or loan type. Marketplace lenders may be subject to federal and state regulations related to bank supervision and securities regulation. The depository institution regulators other than the National Credit Union Administration (NCUA) have authority to regulate and examine certain services provided

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<sup>30</sup>Consumer Financial Protection Bureau, *Project Catalyst report: Promoting consumer-friendly innovation* (Washington, D.C.: Oct. 2016).

<sup>31</sup>Office of the Comptroller of the Currency, *Exploring Special Purpose National Bank Charters for Fintech Companies* (Washington, D.C.: Dec. 2016). The OCC issued a summary of comments and explanatory statement regarding the Special Purpose National Bank charters for financial companies in March 2017. Office of the Comptroller of the Currency, *OCC Summary of Comments and Explanatory Statement: Special Purpose National Bank Charters for Financial Technology Companies* (Washington, D.C.: Mar. 2017).

<sup>32</sup>NMLS was originally developed as a voluntary system for state licensing and then became mandatory for mortgage licensing in the Secure and Fair Enforcement for Mortgage Licensing Act of 2008, which was part of the Housing and Economic Recovery Act of 2008. Pub. L. No. 110-289, Title V, 122 Stat. 2654, 2810 (2008).

by third parties.<sup>33</sup> Marketplace lenders that provide services through an arrangement with federally regulated depository institutions may be subject to examination by the depository institution's regulator in connection with the performance of those services. The depository institution regulators also provide third-party guidance or vendor risk management guidance that depository institutions should adhere to.<sup>34</sup> Some marketplace lenders that originate loans directly to consumers or businesses (e.g., a direct marketplace lender) are generally required to obtain licenses and register in each state in which they provide lending services.<sup>35</sup> According to officials from CSBS, state regulators then have the ability to supervise these lenders, ensuring that the lender is complying with state and federal lending laws. Marketplace lenders may be subject to federal consumer protection laws enforced by CFPB and the Federal Trade Commission (FTC). Certain regulations generally apply to consumer loans but may not apply to small business or other commercial loans, though, FTC does have the authority under Section 5 of the Federal Trade Commission Act to protect, among others, small businesses that are consumers of marketplace lending products or services from unfair or deceptive acts or practices. Lastly, SEC regulates

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<sup>33</sup>NCUA does not have formal authority over fintech firms that partner with federally insured credit unions. The Bank Service Company Act—to examine and regulate certain services provided by third parties to insured depository institutions to the same extent as if the activities were performed by the financial institution itself—does not apply to NCUA. In addition, the Federal Credit Union Act does not provide comparable authority. Previously, we have asked Congress to consider granting NCUA with this authority, but no actions have been taken to date. NCUA's ability to influence compliance is limited to working with credit unions engaging with fintech payment providers to ensure that the institutions monitor the risks of these relationships. See GAO, *Cybersecurity: Bank and Other Depository Regulators Need Better Data Analytics and Depository Institutions Want More Usable Threat Information*, [GAO-15-509](#) (Washington, D.C.: July 2, 2015).

<sup>34</sup>For example, OCC's *Third Party Relationships Risk Management Guidance* says that a bank should adopt risk management processes commensurate with the level of risk and complexity of its third-party relations, and ensure comprehensive risk management and oversight of third-party relationships involving critical activities, and through the life-cycle of the relationship. FDIC's *Guidance for Managing Third-Party Risk* provides four main elements of an effective third-party risk management process: (1) risk assessment, (2) due diligence in selecting a third party, (3) contract structuring and review, and (4) oversight. Office of the Comptroller of the Currency, *Third-Party Relationships*, OCC Bulletin 2013-29 (Washington, D.C.: Oct. 30, 2013). FDIC Financial Institution Letters 44-2008, *Guidance For Managing Third Party Risk* (Washington, D.C.: June 6, 2008).

<sup>35</sup>Department of the Treasury, *Opportunities and Challenges in Online Marketplace Lending*, May 10, 2016.

public offerings of securities by the marketplace lenders, unless an exemption from registration applies.<sup>36</sup>

*Mobile Payments.* The regulatory and oversight framework for mobile payments consists of a variety of federal and state regulation and oversight. Determining which laws apply to mobile payments is complicated by several factors, including agency jurisdiction, mobile payment providers' relationship to depository institutions, and the type of account used by a consumer to make a mobile payment. Three of the federal depository institution regulators—Federal Reserve, FDIC, and OCC—are authorized to examine and regulate the provision of certain services provided by mobile payment providers to federally insured banks and thrifts.<sup>37</sup> CFPB has consumer protection authority over certain nonbank institutions and enforcement jurisdiction over entities that offer or provide consumer financial products or services. Nonbank providers of financial products and services, including mobile payment providers and prepaid card providers, may be subject to FTC consumer protection enforcement actions. Additionally, state regulators oversee mobile payment providers licensed in each state in which they operate as a money service business.

*Digital Wealth Management.* SEC regulates investment advisers, which generally includes firms that provide digital wealth management platforms. SEC subjects digital wealth management firms to the same regulations as traditional investment advisers and requires digital wealth management firms that manage over \$110 million in assets to register as investment advisers.<sup>38</sup> SEC's supervision of investment advisers includes evaluating their compliance with federal securities laws by conducting examinations, including reviewing disclosures made to customers. It also investigates and imposes sanctions for violations of securities laws. State securities regulators generally have registration and oversight responsibilities for investment adviser firms that manage less than \$100 million in client assets, if they are not registered with SEC, and can bring

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<sup>36</sup>At the state level, state securities regulators are generally responsible for registering certain securities products and, along with SEC, investigating securities fraud.

<sup>37</sup>As mentioned above, NCUA does not have formal authority over fintech firms that partner with federally insured credit unions.

<sup>38</sup>SEC Rule 203A-2(e) permits internet investment advisers to register with SEC if the adviser provides investment advice to all of its clients exclusively through the adviser's interactive website, except that the investment adviser may provide investment advice to fewer than 15 clients through other means during the preceding 12 months.

enforcement action against firms with assets of any amount for violations of state fraud laws. The FINRA also has regulatory authority over broker-dealers that use digital investment advice tools to provide investment services to clients. The Commodities Futures Trading Commission has oversight authority over commodity trading advisers, of which CFTC officials stated that digital wealth management firms that meet the statutory definition would be subject to the same oversight and compliance obligations of other traditional commodity trading advisers. Digital wealth management firms are subject to consumer protection laws that are enforced by FTC.

*Distributed ledger technology.* Continued development of DLT is needed to understand how DLT and its components will be regulated by the existing legal and regulatory system.<sup>39</sup> Additionally, it is unclear whether new regulation will need to be created because a distributed ledger technology network can present new and unique challenges. According to FSOC, financial regulators should monitor and evaluate how a distributed ledger technology network can affect regulated entities and their operations.<sup>40</sup> We have previously reported on the regulatory oversight of virtual currencies that use distributed ledger technology.<sup>41</sup> With respect to virtual currencies, which use distributed ledger technology, federal and state regulators have taken varied approaches to regulation and oversight.<sup>42</sup> Representatives of financial regulators have noted the importance of implementing distributed ledger technology in a manner that is transparent and satisfies regulatory requirements.

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<sup>39</sup>David Mills, Kathy Wang, Brendan Malone, Anjana Ravi, Jeff Marquardt, Clinton Chen, Anton Badev, Timothy Brezinski, Linda Fahy, Kimberley Liao, Vanessa Kargenian, Max Ellithorpe, Wendy Ng, and Maria Baird (2016), "Distributed ledger technology in payments, clearing, and settlement," Finance and Economics Discussion Series 2016-095, Washington: Board of Governors of the Federal Reserve System, <https://doi.org/10.17016/FEDS.2016.095>; Financial Stability Oversight Council, 2016 *Annual Report* (Washington, D.C.: June 21, 2016).

<sup>40</sup>The Financial Stability Oversight Council was created by the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010 as a body designed to identify risks and respond to emerging threats to the United States' financial stability. Pub. L. No. 111-203, § 112, 124 Stat. 1376, 1394-1398 (2010).

<sup>41</sup>[GAO-14-496](#).

<sup>42</sup>This testimony does not cover all applicable regulatory requirements and oversight activities related to virtual currencies. For more information see [GAO-14-496](#).

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Chairmen Crapo, Ranking Member Brown, and members of the Committee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

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## Contacts and Acknowledgments

If you or your staff have any questions about this testimony, please contact Lawrance Evans, Jr. at (202) 512-8678 or [evansl@gao.gov](mailto:evansl@gao.gov). Contact points for our Offices of Public Affairs and Congressional Relations may be found on the last page of this report. GAO staff who made key contributions to this testimony include Harry Medina (Assistant Director), Christopher Ross (Analyst in Charge), Namita Bhatia-Sabharwal, Chloe Brown, Lauren Comeau, Pamela Davidson, Janet Eackloff, Cody Goebel, Davis Judson, Erika Navarro, Silvia Porres, Tovah Rom, Jessica Sandler, and Jena Sinkfield.

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