



**Congressional  
Research Service**

Informing the legislative debate since 1914

---

# Big Tech in Financial Services

Updated July 29, 2022

**Congressional Research Service**

<https://crsreports.congress.gov>

R47104



## Big Tech in Financial Services

R47104

July 29, 2022

**Paul Tierno**  
Analyst in Financial  
Economics

For the past decade or so, “Big Tech”—which hereinafter refers to the large technology companies Amazon, Apple, Google, and Facebook (now Meta Platforms), unless otherwise noted—has been offering a variety of financial services products to retail customers. Big Tech uses advanced data analysis and novel partnerships with traditional financial institutions to redefine financial services. The financial service with unanimous participation among Big Tech companies is payments. In 2021, more than 100 million consumers used mobile payment apps, including those provided by Big Tech. Other offerings include credit cards and lines of credit, value storage, and stablecoin wallets. In addition to these direct offerings of financial services, Big Tech has other significant, albeit less direct, ties to finance. Amazon, Microsoft, and Google account for roughly two-thirds of cloud service in the United States and count banks and other financial institutions as major customers.

Big Tech relies on partnerships with traditional financial institutions in some capacity to deliver nearly all of these services. The variation in such relationships accounts for much of the difference both between companies and among products offered by the same company. These complex partnerships can obscure the role of Big Tech and the ultimate provider of the financial service, and they raise the question: Do Big Tech companies provide convenient interfaces, or are they true financial institutions? The answer to that question, perhaps not surprisingly, lies somewhere in between. Big Tech companies are neither pure financial institutions nor solely technology providers.

The premise of that debate belies a fundamental issue. Irrespective of the nature of their relationships and current role in financial intermediation, Big Tech companies have demonstrated interest and possess the scale and financial capacity to increase their range of offerings of financial products should they choose to do so. Traditional economic factors such as economies of scale and network effects—and the unique advantages of the Big Tech business model, which relies on access to troves of data and insight into consumers’ behavioral preferences—support this reality.

The context in which these developments have taken place raises a host of policy issues. Currently, regulation of Big Tech’s financial services is fragmented. Big Techs hold money services licenses for their role in facilitating payments and are subject to a handful of regulations, but they also rely on the licenses of their partners to facilitate other offerings. Some observers question whether the existing regulatory framework is adequate. Regulation-related policy issues include, as well, consumer protection concerns and evolving data security and privacy laws. Other policy issues include financial inclusion, algorithmic bias, and third-party and cyber risk. How these companies evolve will have consequences for many of these policy issues but perhaps none more so than the companies’ regulatory treatment.

# Contents

Introduction .....	1
Overview of Big Tech.....	2
Who Are and What Is Big Tech?.....	2
Big Tech vs. Fintech.....	3
Big Tech in Finance.....	4
Motivations .....	5
Environment.....	6
Apple.....	6
Wallet and Payments: Apple Pay .....	6
Value Storage and Peer-to-Peer Payments: Apple Cash .....	7
Lending and Credit .....	8
Amazon .....	9
Wallet and Payments.....	9
Lending and Credit .....	10
Value Storage: Amazon Cash.....	12
Google.....	12
Wallet and Payments: Google Pay .....	12
Value Storage and Peer-to-Peer Payments: Google Pay Balance .....	13
Lending and Credit .....	13
Facebook (Meta) .....	14
Wallet and Payments: Facebook Pay .....	14
Value Storage and Peer-to-Peer Payments .....	14
Stablecoin Wallet: Novi .....	15
Big Techs as Financial Services Third-Party Providers .....	17
Cloud Service Providers (CSPs) .....	18
Existing Regulatory Framework.....	19
Money Services Business Licensure .....	19
Consumer Financial Protection Bureau.....	19
Data Protection Requirements.....	20
Bank Service Company Act .....	21
Big Tech Policy Issues.....	21
Is the Existing Regulatory Framework Adequate?.....	21
Systemic Risk and Market Power .....	23
Deposit Insurance.....	25
Data Rights.....	25
Financial Inclusion.....	26
Algorithmic Bias and Moral Hazard .....	27
Cloud Cyber Risk, Concentration Risk, and Other CSP Policy Issues .....	28
Future Possibilities of Big Tech in Finance.....	29
Investment Advisory Services.....	29
Insurance .....	29
Banking .....	30
Legislative Framework .....	30
Relevant History .....	31

**Figures**

Figure 1. Big Tech in Finance ..... 5

**Contacts**

Author Information..... 31

## Introduction

The term *Big Tech*, which was coined in 2013 and connotes a specific technology-based business model of considerable scale, consists of Amazon, Apple, Google, Facebook (now Meta Platforms), and sometimes Microsoft (sometimes also called the “Big Four” or the “Big Five”; see the “Who Are and What Is Big Tech?” section for a more thorough description of the term and companies).<sup>1</sup> Big Techs are best known for platform-based businesses that range from e-commerce, social media, and search engines to smartphones and cloud services. Over the past decade, they have also steadily increased their financial services offerings—including providing value storage, credit, and stablecoin wallets—and are recognized as dominant providers in at least one sector: payments. Big Tech has charted various paths to deliver these services, with the same company sometimes employing different models depending on the offering. Big Techs intersect with financial services indirectly, too, in their role as cloud service providers. Combined, three of the Big Techs (Amazon, Microsoft, and Google) represent nearly 70% of the U.S. cloud market. Nearly all financial institutions use cloud services in some capacity, and the total workload performed in the cloud is expected to grow.

Although each Big Tech company offers different financial services, their participation in financial markets raises a broader set of common policy issues. While this report addresses many of the risks associated with Big Techs’ financial offerings, it also highlights that, like financial technology companies before them, they also provide various benefits. They are convenient and allow various financial services to be housed in one platform, often with a user-friendly interface. Moreover, information gleaned from their nonfinancial activities may be used to offer services at lower costs than current offerings and allow them to reach sectors previously shut out of services.

Big Techs merit this analysis because they are large relative to both the average company and large traditional financial institutions—the average size of a Big Tech company (by market capitalization) is \$1.51 trillion, making them four of the 10 largest firms in the United States by that measure—and have demonstrated interest in expanding further still in financial services.<sup>2</sup> The business model of Big Techs leverages a unique combination of economic, financial, and technical advantages that support their activity in financial services. By contrast, there are exceedingly few other companies comparable in size and fewer, if any, with that combination of advantages. Those large non-Big Tech companies that have explored offering financial services do not necessarily have the same business models supported by data that would allow them to scale rapidly. Some larger companies that have tried to enter financial services have experienced pushback, as is discussed in the “Banking” section. Conversely, some companies offering financial technology (“fintech”) have successfully entered the financial sector, share Big Tech’s ambitions, and may be large in specific financial markets, but they lack the Big Techs’ sheer size.

There are a few metrics to evaluate Big Tech’s presence in financial services. Generally, they suggest that the share of financial services provided by Big Tech is minimal compared to that of

<sup>1</sup> This report limits the discussion of Big Tech in financial services to retail financial products and services and cloud services. Therefore, it focuses on Amazon, Apple, Facebook, and Google. The report discusses Microsoft only in the context of cloud services because Microsoft does not provide retail financial services.

<sup>2</sup> The mean market capitalization of S&P500 companies is \$72.9 billion as of April 22, 2022, and \$160.1 billion for the top 10 banks as of May 4, 2022. The \$1.51 trillion average market capitalization of Big Tech does not include Microsoft. With Microsoft the average size reaches \$1.63 trillion, and the list is five of the 10 largest U.S. companies. See S&P Global, “S&P Dow Jones Indices: S&P 500 (USD) Factsheet,” April 22, 2022, <https://www.spglobal.com/spdji/en/indices/equity/sp-500/#overview>, according to which the mean market capitalization of S&P500 companies is \$72.9 billion as of April 22, 2022. See also CompaniesMarketCap.com, “Largest Banks and Bank Holding Companies by Market Cap,” <https://companiesmarketcap.com/banks/largest-banks-by-market-cap/>, for bank and Big Tech market capitalizations.

traditional financial institutions. At the same time, many believe the Big Techs' access to data, strong financial position, market power and recognition, and growing trove of experiences in financial services—including their willingness to partner with traditional players—would allow them to grow very quickly should they decide to make more concerted ventures into the market.

If and how Big Tech's offering of financial services evolves is a source of interest and speculation, because expansion into certain areas arguably tests the limits of existing regulatory structures that were not designed with Big Techs in mind. They may decide to expand their footprint in existing services and to grow in a manner that mirrors nonbank financial companies. Alternatively, they may opt to offer more bank-like activities. Regardless, each path would influence how they are regulated and may stoke the ongoing debate over the long-standing U.S. policy of maintaining the separation of commerce and banking.

This report provides a broad overview of the business models that define Big Tech, including a review of the motivations and environment that surround Big Tech's operations in finance, with a focus on retail financial products. It evaluates the various financial services offered by Big Tech and its relevant partnerships. Finally, it discusses the policy issues raised by existing offerings and the implications of potential paths of development.

## Overview of Big Tech

Big Tech companies have grown from operating in relatively niche markets to multinational conglomerates whose services are ubiquitous in American and global life and whose digital platforms have been referred to as the dominant organizational model of the digital age.<sup>3</sup> The rise of Big Tech benefited from and further fueled increased connectivity. Data compiled by the World Bank shows that as of 2019, nearly 90% of Americans used the internet.<sup>4</sup> Four of the top five most-visited websites are owned by Big Techs.<sup>5</sup> Combined, these statistics describe the landscape that produced Big Tech and allowed it to flourish and subsequently enabled the generation of proprietary data that has been integral to the success of these companies.

## Who Are and What Is Big Tech?

The term *Big Tech* can mean different things depending on who is using it, but it generally evokes companies that possess significant scale and power. The companies are dominant in their technology-respective fields and have played a substantial role in transforming the internet economy and attracting billions of users worldwide.<sup>6</sup>

According to media reports, the term *Big Tech* was likely used first in or around 2013 but did not gain popularity until 2017.<sup>7</sup> There is precedent for use of the term in Congress: In 2019 the Keep Big Tech out of Congress Bill (H.R. 4813 [116<sup>th</sup> Congress]) referred to Big Techs as “large technology platforms” and defined them by size as generating global revenue of \$25 billion or

---

<sup>3</sup> Annabelle Gawer, “Digital Platforms and Ecosystems: Remarks on the Dominant Organizational Forms of the Digital Age,” *Innovation: Organization and Management*, August 1, 2021, <https://ssrn.com/abstract=3900105>.

<sup>4</sup> World Bank, “Individuals using the Internet (% of population) - United States,” <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=US>.

<sup>5</sup> Google.com, youtube.com, facebook.com, and amazon.com. Youtube.com is owned by Google. See, for statistics, Similarweb, “Top Websites Ranking,” <https://www.similarweb.com/top-websites/united-states/>.

<sup>6</sup> See CRS Report R46875, *The Big Tech Antitrust Bills*, by Jay B. Sykes.

<sup>7</sup> Will Oremus, “Big Tobacco. Big Pharma. Big Tech?” *Slate*, November 17, 2017, <https://slate.com/technology/2017/11/how-silicon-valley-became-big-tech.html>.

greater and “predominately engaged in the business of offering to the public an online marketplace, an exchange, or a platform for connecting third parties.”<sup>8</sup> In addition, various multilateral institutions, including the Bank for International Settlements (BIS) and the Financial Stability Board (FSB) use the term regularly when discussing the aforementioned companies and related business models. The BIS and FSB also include in the term certain international companies, which are not covered in this report.

Companies that make up Big Tech offer different products and services associated with the internet and digital ecosystem. The broader Big Tech business model typically leverages a few key aspects, with the diverse companies embodying different traits to varying degrees. They include economies of scale and network effects, advances in technology (including cloud services and reliable and fast connectivity), the ability to understand and adapt to consumer behavior based on the generation and collection of data, and advanced analytics often involving artificial intelligence and machine learning. Big Techs tend to be financially liquid with substantial cash reserves and high credit ratings and cheaper cost of funds than some of the largest banks, providing them with ample capital to fund new initiatives.<sup>9</sup> While some of these factors certainly apply to other fintechs, Big Tech possesses them all.

### Big Tech vs. Fintech

Big Tech’s role in financial services is analogous to that played by fintech firms. Both typically provide user-friendly interfaces. At least initially, both have tended to focus on specific business lines (often said to be “unbundling” the numerous services usually offered together by traditional banks and financial institutions). They both rely heavily on data, and alternative data in particular, to make underwriting decisions. The generation, use, and analysis of “alternative data”—that is, data *not* typically used by credit reporting agencies for underwriting decisions—has driven the rise in the provision of financial services by fintech firms, which use the data to assess risks, predict outcomes, and allocate capital across the financial system.<sup>10</sup> However, Big Techs “compound the advantages of fintechs with large scale existing customer bases for non-financial business lines, associated customer data, and high levels of brand trust.”<sup>11</sup> Two characteristics distinguish Big Tech from fintech firms more generally. Namely, Big Techs began in and maintain primary business in non-financial fields. More importantly, the scale, maturity, profitability, and

<sup>8</sup> The \$25 billion or greater figure cited in H.R. 4813 would capture many companies not currently defined as Big Tech. In addition, the Investigation of Competition in Digital Markets by the House Committee on the Judiciary, Subcommittee on Antitrust, Commercial and Administrative Law, in October 2020 alluded to the term *Big Tech*. More recently, H.R. 3825 (117<sup>th</sup> Congress), the Ending Platform Monopolies Act, uses the term *online platform* in lieu of *Big Tech*. Importantly, the bill would create a new criterion, referring to an online platform that “is owned or controlled by a person with net annual sales, or a market capitalization greater than \$600,000,000,000.” The only U.S.-based companies that fit the description are Big Techs.

<sup>9</sup> This section discusses topics raised in various sources. For a discussion of characteristics of Big Tech in finance, see Vichett Oung, *Big Tech in Finance: Market Developments and Potential Financial Stability Implications*, Financial Stability Board, December 9, 2019, p. 16, <https://www.fsb.org/wp-content/uploads/P091219-1.pdf>; and Tobias Adrian, *Big Tech in Financial Services*, International Monetary Fund, June 16, 2021, <https://www.imf.org/en/News/Articles/2021/06/16/sp061721-Big-Tech-in-financial-services>.

<sup>10</sup> For more on fintech, the use of alternative data in fintech, and a list of alternative data, see CRS Report R46332, *Fintech: Overview of Innovative Financial Technology and Selected Policy Issues*, coordinated by David W. Perkins.

<sup>11</sup> Erik Feyen et al., *Fintech and the Digital Transformation of Financial Services: Implications for Market Structure and Public Policy*, BIS, July 2021, pp. v, 18, <https://www.bis.org/publ/bppdf/bispap117.pdf>.

reach of Big Techs dwarfs even the largest fintechs and would allow them to be competitive across the entire financial industry immediately.<sup>12</sup>

This report focuses on Big Techs because of the distinct policy issues stemming from their novel business model and continued expansion into financial services, including through partnerships with legacy financial institutions and as independent ventures. The move into finance represents a foray into a new industry for the companies but also offers a potential trove of new data that can reinforce their existing businesses.

## Big Tech in Finance

Big Techs' offerings of financial services represent a spectrum of partnerships with traditional financial institutions. Big Tech companies rely on partnerships with these institutions to varying degrees to deliver nearly all of these services and using an array of delivery models. In certain offerings, the Big Tech company is the primary party offering the service directly to the customer with little reliance on traditional financial institutions. Further along the spectrum, Big Tech companies may apply their corporate branding to services that are actually performed, at least in part, by specialty banks (in so-called white label offerings). Additionally, Big Techs partner with legacy financial institutions in co-branding partnerships in which the Big Tech company's involvement in the underlying transaction is minimal, such as providing a user interface and raw data, while the financial institution performs the underwriting. Separate from these partnerships, Big Tech's financial services offerings require a certain level of integration with financial system infrastructure, such as wire services and credit card networks.

Given the varied relationships with traditional financial institutions, and no clear delineation between the companies' delivery models (i.e., how they reach and interface with customers), how Big Tech financial service models differ is mostly defined by the level and nature of the partnerships with traditional financial institutions. However, there may be slight variations in delivery, and different companies may provide the same type of products differently. Also, one company may offer multiple products, each through different delivery methods. Finally, companies may differ in which products they choose to offer. (The one common thread among companies is that they are all active in payments, which some analysts suggest is particularly lucrative in terms of both data collection and revenue generation. According to one consulting firm, payments produce 90% of banks' most useful customer data. Moreover, experts estimate that each subscribed user is worth upward of \$400 a year in revenue for a mobile payment company.<sup>13</sup>)

This section first discusses Big Tech's potential motivations to enter finance and the market environment and is then organized by company and further by product offering. This section does not provide an overview of Microsoft because the company is not actively engaged in retail financial services. However, its actions as a cloud service provider are discussed in "Cloud Service Providers (CSPs)."

---

<sup>12</sup> The respective market capitalizations of Big Tech are: Amazon (\$1.24 trillion), Apple (\$2.63 trillion), Facebook (\$614.6 billion), and Google (1.56 trillion); see <https://companiesmarketcap.com/>. Market caps for other fintechs are Robinhood (\$8.6 billion), Stripe (\$95 billion), and Klarna (\$45.6 billion); see *Bloomberg*, "Stripe 'Happy' to Stay Private After Reaching \$95 Billion Value," <https://www.bloomberg.com/news/articles/2021-11-23/stripe-happy-to-stay-private-after-reaching-95-billion-value>; and *CNBC*, "SoftBank Leads \$640 Million Investment in Klarna, Valuing Buy-Now-Pay-Later Firm at \$46 Billion," <https://www.cnn.com/2021/06/10/klarna-softbank-funding-round.html>.

<sup>13</sup> PwC, *Payments 2025 & Beyond: Navigating the Payments Matrix*, 2021, p. 5, <https://www.pwc.com/gx/en/financial-services/fs-2025/pwc-future-of-payments.pdf>; and Joe Pesker, "How in the World Does Venmo Make Money?," *The Atlantic*, July 18, 2017, <https://www.theatlantic.com/business/archive/2017/07/venmo-makes-money-banks/533946/>.



**Figure I. Big Tech in Finance**  
By Financial Service Activity

	Wallet	Payments	Peer-to-Peer Transfer	Value Storage	Credit card	Other credit	Closed loop credit card	Stablecoin wallet	Deposit Accounts	Cloud Services
Amazon	◆				◆	◆	◆			◆
Apple	◆	◆	◆	◆	◆	◆	◆			
Google	◆	◆	◆	◆	◆	◆				◆
Meta	◆	◆	◆	◆				◆		

**Source:** CRS, based on company material.

**Note:** See text for details.

## Motivations

There are a number of potential motivations for why Big Techs may push deeper into financial services. Increased financial services offerings can further diversify revenue sources, generate more data on spending and saving (which would help their core businesses), and drive engagement by facilitating payments on platforms, among others. Some of these motivations highlight contextual finance, in which financial applications are bundled in an app or platform intended to facilitate another business activity.<sup>14</sup> Expansion would also be self-reinforcing: Data collected on saving and spending patterns in the companies' original markets and existing financial offerings could affect targeting of future financial service offerings or companies that employ that model.<sup>15</sup>

While the path forward for Big Tech—how much further into financial services they will grow and how many services they may eventually offer—remains an open question, some market analysts have tried to ascribe motivations to actions, particularly as it relates to what may be the high-stakes step of applying for and securing a commercial bank charter or similar full-service bank charter. These charters permit holders to undertake certain permissible activities that are potentially highly desirable to Big Techs—such as accepting insured deposits and direct access to the Federal Reserve's payment systems—and grant certain federal preemptions, but they bring a high degree of federal financial regulatory oversight. Alternatively, “chipping away at the business of banking,” but ultimately not offering the services or performing the activities that would require securing a bank charter, could help Big Tech avoid a showdown with regulators.<sup>16</sup> It is also conceivable that some Big Techs believe obtaining a bank charter and thus making their competition that much more direct with incumbent banks, which are also Big Techs' cloud service customers (see “Big Techs as Financial Services Third-Party Providers”), would be problematic. These considerations may suggest that applying for and retaining a banking license would not be worthwhile.<sup>17</sup> Google may have reached this same conclusion. The company reportedly met with officials at the Office of the Comptroller of the Currency (OCC) in 2019 to discuss the agency's

<sup>14</sup> Feyen et al., *Fintech and the Digital Transformation of Financial Services*.

<sup>15</sup> Oung, *Big Tech in Finance*, pp. 11-12.

<sup>16</sup> Dan Murphy, “Big Tech's Invasion of Banking,” *Milken Institute Review*, April 26, 2019, <https://www.milkenreview.org/articles/big-techs-invasion-of-banking>.

<sup>17</sup> Ryan Browne, “Big Tech Will Push Deeper into Finance This Year—But Avoid the ‘Headache’ of Being a Bank,” *CNBC*, January 3, 2020, <https://www.cnbc.com/2020/01/03/big-tech-will-push-into-finance-in-2020-while-avoiding-bank-regulation.html>.

special purpose non-bank charter and briefly considered partnering with depository institutions in offering online bank accounts (see “Google “Plex” text box) before deciding against both.<sup>18</sup>

## Environment

Some observers believe that corporate conditions favor Big Tech’s expansion of financial services offerings. As the dynamic among fintechs, Big Techs, and traditional financial players evolves (see “Big Tech vs. Fintech”), classic economic factors, including economies of scale and network effects, exert pressure on the burgeoning industry. According to a BIS report, such “forces encourage rebundling, and confer advantages to large multi-product providers, including technology (big tech) firms.”<sup>19</sup> In other words, if the early days of fintech were marked by product disaggregation and fintechs attacking individual financial services business lines, Big Tech may be in a position to reaggregate lines again.

Big Tech’s financial position is also conducive to this evolution. According to one consulting firm, Big Tech’s high market valuations (as discussed above<sup>20</sup>) can assist their push into financial services by fueling acquisitions and investments.<sup>21</sup> While Big Techs do not have access to deposits as banks do, Big Techs’ favorable credit ratings and implied cost of debt issuance are in line with large banks, and their return on capital for the tech industry has been better than in banking during the COVID-19 pandemic.<sup>22</sup>

## Apple

### Wallet and Payments: Apple Pay

Apple Pay is a mobile wallet app offered with Apple products that stores and organizes payment information and identification cards such as debit and credit cards, banking information, licenses,<sup>23</sup> student IDs, boarding passes, and insurance cards. Users can use cards stored in the Apple Pay app for payments in person and online. For in-person transactions, the device app uses near field communication (NFC) to detect a payment terminal and retrieve payment credentials to be scanned at the point-of-sale device.<sup>24</sup> The app stores devices such as debit and credit cards that provide the ultimate financial service. However, unlike physical wallets, the device has access to data. While Apple asserts that it does not save data or track individuals’ activity, it does note that

<sup>18</sup> Rachel Witkowski, “Google and Paypal Explored OCC’s Fintech Charter, Then Walked Away,” *American Banker*, June 2019, <https://www.americanbanker.com/news/google-and-paypal-explored-occs-fintech-charter-then-walked-away>.

<sup>19</sup> Feyen et al., *Fintech and the Digital Transformation of Financial Services*.

<sup>20</sup> See footnote 2.

<sup>21</sup> Miklos Dietz et al., “Big Techs Versus Big Banks: Battle for the Customer,” *McKinsey and Company*, November 19, 2020, <https://www.mckinsey.com/industries/financial-services/our-insights/banking-matters/big-techs-versus-big-banks-battle-for-the-customer>.

<sup>22</sup> For comparative returns on capital, see Federal Reserve Bank of St. Louis, “Return on Average Equity for all U.S. Banks,” <https://fred.stlouisfed.org/series/USROE>; and Statista, “Global Technology Industry: Return on Employed Capital from 2007 to 2020,” <https://www.statista.com/statistics/787730/worldwide-technology-industry-return-on-capital-employed/#>.

<sup>23</sup> Apple, “Apple Announces First States Signed Up to Adopt Driver’s Licenses and State IDs in Apple Wallet,” press release, September 1, 2021, <https://www.apple.com/newsroom/2021/09/apple-announces-first-states-to-adopt-drivers-licenses-and-state-ids-in-wallet/>.

<sup>24</sup> For more details on the technology, see <https://support.apple.com/en-us/HT203027>.

it may use certain data to develop new or modify existing Apple products.<sup>25</sup> Apple currently charges banks a fee of 0.15% per credit card and 0.5% per debit card transaction facilitated on its platform.<sup>26</sup>

Recently, Apple Pay began permitting users to store crypto debit cards in its virtual wallet. The company has agreements with Bakkt and Coinbase, two crypto exchanges offering debit cards.<sup>27</sup> Users can get debit cards linked to the exchange-based accounts, which allows them to spend the value stored in crypto exchange. Cryptocurrencies are converted into fiat currency for transactions.

While digital wallets' share of overall payments is still relative small, Apple Pay's share of digital wallet payments is large, especially in the debit card segment. According to a Pulse company survey, there were 76.1 billion debit transactions overall in 2020, of which 2 billion were facilitated using mobile wallets. According to the study, the Apple Wallet is the most popular by far of all mobile wallets, accounting for 92% (or around 1.84 billion) transactions.<sup>28</sup>

### Value Storage and Peer-to-Peer Payments: Apple Cash

Apple Cash is a value storage and payments function that runs on Apple products through the Apple Pay Wallet application. Users can transfer funds from their bank accounts or debit cards stored in their wallets to Apple Cash to become a separate payment option (distinct from the other stored cards). Apple Cash can be used for payments at merchants that accept Apple Pay. It also enables peer-to-peer transfers. For example, one Apple Cash user can send funds to another Apple device/user via text message in a transaction similar to those provided by the Venmo, PayPal, and Cash apps. (Banks launched Zelle, their own peer-to-peer payment method that competes with those offered by fintechs and Big Techs mentioned in this report.) Apple Cash balances function like traditional debit cards. Payments or transfers from one account draw down available funds from a balance. According to a 2021 survey, transfers on Apple Cash accounts for 8% of all peer-to-peer transfers. By contrast, PayPal represents 26%, while the Venmo and Cash apps represent 16% each.<sup>29</sup>

The Apple Cash function represents a partnership with and operation across various traditional financial institutions and channels. First, Apple Cash must be linked to a supported debit card or Automated Clearing House (ACH)-linked bank account that acts as a funding source. That

<sup>25</sup> While Apple contends that its employees do not store or review individuals' data, Apple Pay uses various information to determine whether an individual is eligible for Apple Pay. In addition, the company may retain anonymized info after use to improve Apple Pay and other Apple products and services. (See Apple, "Apple Pay & Privacy," <https://www.apple.com/legal/privacy/data/en/apple-pay/>.)

<sup>26</sup> AnnaMaria Andriotis, "Apple Pay Fees Vex Credit-Card Issuers," *Wall Street Journal*, October 5, 2021, <https://www.wsj.com/articles/apple-pay-fees-vex-credit-card-issuers-11633449317>; and Alistair Barr and Robin Sidel, "Google Misses Out on Apple's Slice of Mobile Transactions," *Wall Street Journal*, June 5, 2015, <https://www.wsj.com/articles/google-loses-key-mobile-payment-feesgoogle-misses-out-on-apples-slice-of-mobile-transactions-1433546638>.

<sup>27</sup> Coinbase, "Now Use Your Coinbase Card with Apple Pay and Google Pay," press release, June 1, 2021, <https://blog.coinbase.com/now-use-your-coinbase-card-with-apple-pay-and-google-pay-df951ad52c89>; and Bakkt, "Tap into Crypto with Bakkt and Apple Pay—It's Fast, Easy, and Secure," press release, December 15, 2021, <https://www.bakkt.com/blog/consumer/tap-into-crypto-with-bakkt-and-apple-pay>.

<sup>28</sup> Pulse, *2021 Debit Issuer Study White Paper*, 2021, <https://content.pulsenetwork.com/debit-issuer-study/2021-debit-issuer-study-white-paper>. For total debit transactions, see p. 5. For mobile wallet transactions, see p. 3. Pulse is a Discover company; Discover previously operated the debit rails for Apple Cash.

<sup>29</sup> Tatum Hunter, "Breaking Up with Venmo: The Best Payment Apps for Privacy and Low Fees," *Washington Post*, September 23, 2021, <https://www.washingtonpost.com/technology/2021/07/21/best-p2p-payment-apps/>.

funding source will also be used if a balance is insufficient to complete a transfer. Additionally, Apple Cash and associated balances exist as a virtual payment card issued by and whose balances are held at Green Dot Bank. Green Dot is a Federal Deposit Insurance Corporation (FDIC)-insured bank, and, as such, balances are eligible for FDIC insurance like other bank deposits, provided users meet certain requirements.<sup>30</sup> Beginning in April 2022, funding the Apple Cash balance and subsequent peer-to-peer transactions take place over the Visa credit card network.<sup>31</sup> Previously both had taken place over the Discover card debit network.<sup>32</sup>

## Lending and Credit

Apple entered the consumer credit market in August 2019 with the Apple Card. The Apple Card is a credit card offered in partnership with Marcus, Goldman Sachs’s consumer bank subsidiary. Goldman Sachs issues the card and performs all associated credit underwriting.<sup>33</sup> While the card can be stored virtually in the Apple Wallet (see “Wallet and Payments: Apple Pay” section above), a physical card is also provided. The card operates on the Mastercard network. Annual interest rates offered by the card between are between 10.99% and 21.99%, depending on credit worthiness, which are roughly in line with average market annual percentage rates (APRs).<sup>34</sup> Apple Card is the first credit card offered by Goldman Sachs, and Apple Card balances at the bank totaled more than \$4 billion at the end of 2020.<sup>35</sup> The credit card partnership is similar to other card and enterprise partnerships, such as those with airlines, for example. However, the card resides in the Wallet app and automatically facilitates at least minimum monthly payments for specific purchases from linked bank accounts or debit cards also stored in the wallet.

In addition, Apple extends two other financing arrangements strictly for use when purchasing Apple products. First, customers can finance the purchase of iPhones through iPhone Payments,<sup>36</sup> which is a partnership between Apple and Citizens Bank, N.A. Subject to approval, customers are charged a 0% APR and make monthly installment payments over the course of 24 months. Apple Card holders can also use their Goldman Sachs–backed Apple Cards to purchase eligible Apple products through a monthly installment plan, called Apple Card Monthly Installment (ACMI),

<sup>30</sup> Green Dot Bank, “Apple Cash Terms and Conditions,” <https://applescash.greendot.com/termsconditions/>. To be eligible for FDIC insurance, Apple Cash users must register their virtual cards with Green Dot Bank and verify their identities.

<sup>31</sup> Kate Fitzgerald, “Apple Drops Discover, Adds Visa as Virtual Debit Card Partner,” *American Banker*, April 20, 2022, <https://www.americanbanker.com/news/apple-drops-discover-adds-visa-as-virtual-debit-card-partner>.

<sup>32</sup> Neil Hughes, “Apple Pay Cash Leverages Discover Network for New Virtual Debit Card,” *Apple Insider*, December 5, 2017, <https://appleinsider.com/articles/17/12/05/apple-pay-cash-leverages-discover-network-for-new-virtual-debit-card>.

<sup>33</sup> Apple, “Introducing Apple Card, A New Kind of Credit Card Created by Apple,” press release, March 25, 2019, <https://www.apple.com/newsroom/2019/03/introducing-apple-card-a-new-kind-of-credit-card-created-by-apple/>.

<sup>34</sup> See Board of Governors of the Federal Reserve System, “Consumer Credit - G. 19,” December 7, 2021, <https://www.federalreserve.gov/releases/g19/current/>. Average credit card APRs were 14.54% in the second quarter of 2021.

<sup>35</sup> Goldman Sachs Group, “2020 Form 10-K,” February 19, 2021, <https://www.goldmansachs.com/investor-relations/financials/current/10k/2020-10-k.pdf>. Credit card balances were \$4.2 billion; installment loans were an additional \$3.8 billion. Apple Card Monthly Installment became available in December 2019, being more broadly available beyond iPhones in June 2020. Goldman’s Marcus also offers credit card consolidations, so it is unclear if the installment loan figure in this document includes more than Apple products.

<sup>36</sup> Apple, “iPhone Payments Terms and Conditions,” [https://www.apple.com/legal/sales-support/iphoneinstallments\\_us/](https://www.apple.com/legal/sales-support/iphoneinstallments_us/).

with no interest.<sup>37</sup> This loan syncs with the Apple Card in the wallet, and the monthly installment is automatically added to the minimum payment for Apple Card.

Previously, Apple-affiliated no-interest installment payments had been available solely for Apple products. In June 2022, however, Apple announced that it would be launching Apple Pay Later, an interest-free, no fee, installment payment credit product for customers. Apple Pay Later will reportedly allow the customer to pay for a purchase in four equal payments over six weeks; payments will be managed through the wallet app.<sup>38</sup> While industry media had previously reported that Apple and Goldman Sachs were developing the installment plan together, it appears Apple proceeded without the bank and will reportedly perform credit checks and underwriting.<sup>39</sup> The product as described would compete with “buy now pay later” credit products that have grown in popularity, but whose business models have been tested recently with the shifting economic climate and sentiment.<sup>40</sup>

## Amazon

Amazon has made various forays into financial services including payments, a value storage service, and various credit products.

### Wallet and Payments

Amazon’s payment function is embedded in the company’s core business platform. Consumers using the company’s e-commerce site are automatically directed to Amazon’s payments wallet at checkout, where they can save various forms of payment, including payment plans offered in partnership with Affirm. As such, users typically encounter it only on the platform.

While the payment function offered at Amazon checkout is fairly standard for large retailers, the company also sells its payment option to other retailers.<sup>41</sup> For example, retailers that purchase the payment service can offer Amazon Pay as a payment option at checkout even when not purchased on the Amazon platform. When Amazon Pay is selected at a third-party site, a user is prompted to sign in. Existing Amazon users can select Amazon Pay, use their Amazon credentials to complete payment, or create an Amazon profile. Depending on the merchant agreement, input of customer credentials may also prompt Amazon-stored shipping addresses and other details.

<sup>37</sup> See <https://www.apple.com/apple-card/monthly-installments/>. Both the Apple Card (ACMI) and iPhone Payments installment plans are distinct from plans offered by affiliated carriers that may also allow installment payments.

<sup>38</sup> Apple, “What’s New in Apple Pay: Apple Pay Later,” press release, undated, last accessed July 27, 2022, at <https://developer.apple.com/apple-pay/whats-new/> and Apple, “WWDC 2022—June 6, Apple” June 6, 2022, at 21:10, at <https://www.youtube.com/watch?v=q5D55G7Ejs8>.

<sup>39</sup> Mark Gurman and Sridhar Natarajan, “Apple, Goldman Plan ‘Buy Now, Pay Later’ Service to Rival Affirm,” *Bloomberg*, July 13, 2021, <https://www.bloomberg.com/news/articles/2021-07-13/apple-goldman-plan-buy-now-pay-later-service-to-rival-paypal>. For Apple performing credit checks and underwriting, see Kif Leswing, “A Wholly Owned Subsidiary of Apple Will Extend Loans for Its Pay Later Service,” *CNBC*, June 8, 2022, at <https://www.cnbc.com/2022/06/08/apple-will-handle-lending-for-apple-pay-later.html>.

<sup>40</sup> For more information on “buy now pay later,” see CRS Insight IN11784, *Rapidly Growing “Buy Now, Pay Later” (BNPL) Financing: Market Developments and Policy Issues*, by Cheryl R. Cooper and Paul Tierno. Regarding recent challenges with BNPL model, see AnnaMaria Andriotis, “Missed Payments, Rising Interest Rates Put ‘Buy Now, Pay Later’ to the Test,” *The Wall Street Journal*, June 1, 2022, at <https://www.wsj.com/articles/missed-payments-rising-interest-rates-put-buy-now-pay-later-to-the-test-11654033930>.

<sup>41</sup> Amazon allows users to store a variety of payment options (and addresses), while most retailers limit users.

Amazon Pay’s market share is hard to quantify. Estimates diverge drastically and range from 2.5% to 22%, depending on methodology.<sup>42</sup>

## Lending and Credit

Amazon provides credit in various forms to both platform merchants and customers. According to media reports, the company previously extended credit from its own balance sheet (and may still do so) but now mostly allows banks to offer credit to merchants and customers on its platform.

### Merchant Credit

The company has been extending credit to small- and medium-sized companies that sell on its platform since at least 2011, reportedly lending from its own balance sheet.<sup>43</sup> Media outlets reported in 2018 that Amazon was partnering with Bank of America to offer small business loans to merchants that sell on its platform.<sup>44</sup> The 2018 reporting noted that the relationship with Bank of America likely began in 2016. According to Amazon’s 2016 annual report, the bank had extended a \$500 million line of credit secured by receivables. Since then, Amazon has reported in subsequent annual reports that the credit facility increased to \$620 million in 2019 and \$740 million in 2020. At the end of 2020, \$338 million of its revolving credit facility was outstanding—extended to sellers on the platform.<sup>45</sup>

In 2018, Amazon also began partnering with American Express, expanding Amazon-related credit offerings to merchants from loans to cards.<sup>46</sup> APRs on the credit card are currently between 14.24% and 22.24%. It has no annual fee and comes with certain “perks” typical of some credit cards, such as cash-back rewards for certain purchases.

In 2020, Amazon also began partnering with Marcus to offer a credit product to merchants.<sup>47</sup> According to a media report of the partnership, merchants are invited to apply for revolving lines of credit for up to \$1 million at rates of between 6.99% and 20.99%. Fees are applied to missed payments. These rates appear roughly in line with industry alternatives.<sup>48</sup> This is reportedly the first time that Amazon shared information on customer behavior with an external institution, as it

<sup>42</sup> For 2.5% figure, see Enlyft, “Companies Using Amazon Payments,” <https://enlyft.com/tech/products/amazon-payments>. For 22% figure, see Nicolas Lose, Jack Spearman, and Jan Gewiese, *Online Payment Services: Amazon Pay in the United States 2021*, Statista, November 2021, p. 5, <https://www.statista.com/study/73767/online-payment-amazon-pay-in-the-united-states-brand-report/>; and CB Insights, *Everything You Need to Know About What Amazon Is Doing in Financial Services*, 2021, p. 9, <https://www.cbinsights.com/research/report/amazon-across-financial-services-fintech/>. Both are imperfect metrics. The 2.5% figure is based on share of websites that offer Amazon Pay; the 22% figure is based on responses to a survey of the top payments applications used in the past month.

<sup>43</sup> Reporting suggests that prior to 2016, Amazon was lending from its own balance sheet. References to Amazon beginning lending in 2011 may be found at CBInsights, *Everything You Need to Know*, p. 25; and Hugh Son, “Amazon Unveils Small Business Credit Line with Goldman in Latest Tie-Up Between Tech and Wall Street,” *CNBC*, June 10, 2020, <https://www.cnbc.com/2020/06/10/amazon-and-goldman-sachs-unveils-small-business-credit-lines-up-to-1-million.html>. Annual reports show vendor receivables.

<sup>44</sup> Previously Bank of America Merrill Lynch.

<sup>45</sup> See Amazon annual reports at <https://ir.aboutamazon.com/sec-filings/default.aspx.fapr>.

<sup>46</sup> Liz Moyer and Hugh Son, “American Express Has a Deal with Amazon for Card Aimed at Small Businesses,” *CNBC*, June 26, 2018, <https://www.cnbc.com/2018/06/26/general-breaking-news.html>.

<sup>47</sup> Son, “Amazon Unveils Small Business Credit Line.”

<sup>48</sup> Steve Nicastro and Ryan Lane, “Average Business Loan Rate: What to Know About Interest Costs,” *NerdWallet*, January 12, 2022, <https://www.nerdwallet.com/article/small-business/small-business-loan-rates-fees>.

let Goldman make the underwriting decisions. Goldman will supposedly not share with Amazon the information it uses to make the credit decision.<sup>49</sup>

### *Consumer Credit*

Amazon also partners with various financial institutions in offering credit cards to consumers purchasing merchandise on its platform. Amazon offers three main cards, each of which has an Amazon and Amazon Prime<sup>50</sup> variant.

The Amazon Store and Amazon Prime Store cards (“store cards”) are offered to Amazon and Amazon Prime account holders, respectively. The store cards are “closed loop” cards—which means they are permitted for use solely on the Amazon platform—and are offered in partnership with Synchrony Bank, an online-only, FDIC-insured bank that partners with a variety of retailers to issue closed-loop credit cards. The card has no annual fee but may incur late fees. A typical APR is 25.99%.

In addition, the company offers Amazon Secured and Secured Prime closed-loop cards. The secured cards operate like the store cards but are intended to help individuals build or fix their credit.<sup>51</sup> Like the standard store cards, the secured store cards are issued by Synchrony Bank and may be used only on Amazon. The secured store cards require a deposit in the full amount of the credit limit, which “secures” the card.<sup>52</sup> The secure-card-associated APRs and late fees of 10% and \$5, respectively, are significantly lower than the Store and Store Prime Cards. Amazon reports payments to credit reporting agencies to help consumers repair credit.<sup>53</sup>

The company also co-brands an Amazon Rewards and Amazon Prime Rewards card offered in partnership with J.P. Morgan Chase and on the Visa credit card network (sometimes referred to as the Rewards or Prime Rewards Signature Visa). APRs on the credit card are currently between 14.24% and 22.24%, based on credit score. Unlike the store and secured cards, these cards can be used anywhere. They have associated rewards programs that provide cash back from Amazon, Amazon-related businesses, and other merchants.<sup>54</sup>

In August 2021, Amazon began offering financing options with the fintech firm Affirm. This option requires a soft credit check at checkout. While Affirm is known as a “buy now pay later” firm, which in some instances may allow for interest-free options if paid over a short period, its offerings with Amazon come with interest rates currently ranging from 10% to 30% and repayment terms ranging from three to 36 months. This option is financed by Affirm.<sup>55</sup>

<sup>49</sup> Son, “Amazon Unveils Small Business Credit Line.”

<sup>50</sup> Amazon Prime is a subscription service that includes free delivery options, video, discounts at Whole Foods, and others.

<sup>51</sup> See a discussion at Erin Hurd, “5 Things to Know About the Amazon Secured Card,” *NerdWallet*, April 20, 2022, <https://www.nerdwallet.com/article/credit-cards/amazon-store-card-secured-credit-builder-synchrony>. See also Amazon, “Start Building Your Credit,” <https://www.amazon.com/Synchrony-Bank-Amazon-com-Secured-Store/dp/B084KP3NG6>.

<sup>52</sup> This is distinct from a prepaid debit card, because users must still pay off their purchases like credit cards. Secured amounts are held until the card is canceled.

<sup>53</sup> Synchrony Bank-issued credit cards operate on the Mastercard card network.

<sup>54</sup> *Amazon-related* here means Whole Foods and companies that use Amazon Pay. (See “Wallet and Payments” section above.)

<sup>55</sup> Tara Siegel Bernard, “Amazon Strikes a Deal with Affirm, the Buy-Now Pay-Later Provider,” *New York Times*, August 27, 2021, <https://www.nytimes.com/2021/08/27/business/amazon-affirm.html>.

## Value Storage: Amazon Cash<sup>56</sup>

Amazon Cash allows individuals without bank accounts or credit cards to store cash digitally and use it for purchases on the Amazon platform. One uses this service by logging onto Amazon and being assigned a barcode associated with a mobile device. The user presents the barcode or mobile number to a cashier at a physical location with whom Amazon has partnered and deposits cash in amounts of between \$5 and \$500. This prompts the creation of an Amazon gift card available for use solely on the platform. Amazon partners with certain retailers such as 7-Eleven, CVS, and Walgreens that accept the funds and process the transactions. There are no fees associated with the transaction. In addition, Amazon has partnered with Coinstar to allow individuals to add cash to their Amazon Cash balances as well as proceeds of coins that they cash in at Coinstar machines.<sup>57</sup>

## Google<sup>58</sup>

### Wallet and Payments: Google Pay

Google's primary financial application is Google Pay, a virtual wallet that allows users to store credit and debit card information, bank account data, loyalty and/or rewards cards, and transportation and boarding passes. Unlike the Apple Pay wallet, Google Pay does not charge bank issuers of credit or debit cards for the transactions it facilitates.<sup>59</sup>

Google Pay uses NFC technology to facilitate in-person payments. Google Pay may be used only for in-person purchases with devices running on the Android operating system. Google Pay retains details of payments and transactions but does not have access to other details associated with the linked account.<sup>60</sup> However, Google Pay allows users to link the various accounts to Google Pay through Plaid, a fintech data aggregator. This function allows users to see all banking details and transactions with the associated accounts in the app, even those not performed using the Google Pay service. Google provides simple analysis of the data, including spending patterns.

Recently, as with Apple's wallet, Google began permitting storage of Coinbase and Bakkt-issued crypto debit cards in its wallet. While the arrangement will allow individuals to keep digital assets in the Google Pay app, "digital assets such as bitcoin will be converted to fiat currency for these payments to occur."<sup>61</sup>

<sup>56</sup> For more information on Amazon Cash, see <https://www.amazon.com/b?ie=UTF8&node=14583169011>.

<sup>57</sup> See Coinstar, "So Money Possibilities," <https://www.coinstar.com/amazoncash>.

<sup>58</sup> Google's parent company is Alphabet. This report refers to the company as Google as all services discussed fall under the Google brand.

<sup>59</sup> Alistair Barr and Robin Sidel, "Google Misses Out on Apple's Slice of Mobile Transactions," *Wall Street Journal*, June 5, 2015, <https://www.wsj.com/articles/google-loses-key-mobile-payment-feesgoogle-misses-out-on-apples-slice-of-mobile-transactions-1433546638>.

<sup>60</sup> Google says it does not sell transaction information at <https://support.google.com/googlepay/answer/10223752?hl=en&co=GENIE.Platform%3DAndroid>. However, if consumers select "Personalization with Google Pay," they will get tailored offers. Apple says it does not store the information (<https://www.apple.com/privacy/>). Apple claims it does not retain transaction details; Google retains the info but promises not to sell it.

<sup>61</sup> See Businesswire, "Bakkt Partners with Google to Introduce Digital Assets to Millions of Consumers," press release, October 8, 2021, <https://www.businesswire.com/news/home/20211008005265/en/Bakkt-Partners-with-Google-to-Introduce-Digital-Assets-to-Millions-of-Consumers>; and Coinbase, "Now Use Your Coinbase Card with Apple Pay and Google Pay," press release, June 1, 2021, <https://blog.coinbase.com/now-use-your-coinbase-card-with-apple-pay-and-google-pay-df951ad52c89>.



## Value Storage and Peer-to-Peer Payments: Google Pay Balance

Google Pay permits users to store value and make peer-to-peer transfers in the Pay app. Both features require that a user first link a “funding account” to Google Pay to serve as the source of funds. The funding account can be an ACH-enabled checking or savings account or debit card.

Google Pay Balance is the store-of-value feature. Users can link their checking or saving accounts or debit cards to the Google Pay Balance and transfer funds to the balance via the card network or ACH. The balance can also be funded by receiving a peer-to-peer payment from another user. Users can use their Google Pay balances to make peer-to-peer transfers or for purchasing goods and or services from Google or certain merchants. Additionally, users may use their Google Pay Balances through the Google Pay Balance Card. The card is a virtual debit card issued by MetaBank, a South Dakota–chartered bank whose transactions are processed on the Visa network. It may be used as a payment method in the Google wallet. Notably, funds stored in the Balance or on the card are not FDIC insured.<sup>62</sup> (See the discussion of deposit insurance in “Deposit Insurance” section.)

Peer-to-peer transfers can be facilitated solely through a linked debit card or ACH-linked checking or savings account. Alternatively, the Google Pay user may set up or use funds already stored in Google Pay Balance.<sup>63</sup> When making a peer-to-peer transfer, the user is authorizing Google to use the ACH system or initiate a debit transaction over a card network.

Tracking metrics for these services can be challenging, because users may use multiple wallets concurrently. According to one report, Google Pay ranked seventh among peer-to-peer payment apps, with 6% of respondents using mobile apps saying they used Google Pay to send funds to other people.<sup>64</sup> For broader surveys of individuals with various payments apps installed on their smart phones, Google Pay ranks third, with 25% of respondents saying they have it installed.<sup>65</sup>

## Lending and Credit

Google’s activity in lending is limited to the company’s store, where consumers can buy Google products. The company offers a Google Store Financing account, a credit card issued and serviced by Synchrony Bank (the FDIC-insured, online-only credit card bank mentioned earlier).<sup>66</sup> The card may be used only for purchases in the Google Store. The card offers 0% financing for certain repayment terms.

<sup>62</sup> See Google Pay/Google Payments Additional Terms of Service (U.S.) [https://payments.google.com/payments/apis-secure/get\\_legal\\_document?ldo=0&ldt=buyertos&ldr=US#SafeHtmlFilter\\_gpyp2p](https://payments.google.com/payments/apis-secure/get_legal_document?ldo=0&ldt=buyertos&ldr=US#SafeHtmlFilter_gpyp2p).

<sup>63</sup> For details regarding peer-to-peer transfers and Google Cash Balances and Google Pay Balance and virtual cards, see Google Pay/Google Payments Additional Terms of Service (U.S.), at [https://payments.google.com/payments/apis-secure/get\\_legal\\_document?ldo=0&ldt=buyertos&ldr=US](https://payments.google.com/payments/apis-secure/get_legal_document?ldo=0&ldt=buyertos&ldr=US).

<sup>64</sup> Hunter, “Breaking Up with Venmo.”

<sup>65</sup> Ron Shevlin, “PayPal’s Domination of Mobile Payments Is Coming to an End,” *Forbes*, July 13, 2021, <https://www.forbes.com/sites/ronshevlin/2021/07/13/paypals-domination-of-mobile-payments-is-coming-to-an-end/>. This figure of 25% may be misleading as some apps are pre-loaded onto specific mobile phones.

<sup>66</sup> For details on Google Store Financing account, see <https://store.google.com/magazine/financing?hl=en-US>.

### Google “Plex”

In October 2021, Google announced that it was ending a project it had announced two years earlier to partner with traditional depository institutions offering online checking and savings accounts.<sup>67</sup> The project, which was called “Plex” and originally intended to launch in 2021, would have allowed individuals to apply for online-only checking and savings accounts co-branded by Google and one of 11 partner depository financial institutions, including large and community banks alike. Under the arrangement, banks would have performed the traditional banking functions while Google would have provided the interface and marketing. Media and industry reports suggest Google may have ultimately abandoned the project to focus on the expansion of its cloud business into financial services, to avoid the appearance that it was competing with banks—some of whom may be customers of Google Cloud—and to focus on the payments ecosystem.<sup>68</sup>

## Facebook (Meta)

Facebook (which is now Meta Platforms) is a social media platform that also operates financial services applications housed under a division called Facebook Financial. Facebook Financial includes Facebook Pay and Messenger, which permit in-application merchant payments and peer-to-peer transfers. Facebook’s financial services also includes Novi, a stablecoin wallet.<sup>69</sup>

### Wallet and Payments: Facebook Pay

Facebook offers a payments and wallet service for use across its various platforms. Facebook Pay functions as a virtual wallet and payments service for Facebook apps users. Users with Facebook accounts can upload credit cards, debit cards, or PayPal or Shopify accounts for use in transactions only in supported Facebook apps, including Facebook, Instagram, Messenger, and WhatsApp. For example, a user who wants to buy a product found in the Instagram app can purchase the item directly in the app, provided he or she has entered a payment method in Facebook Pay. According to Facebook, transactions on its apps run on existing infrastructure and are facilitated through partnerships with Stripe and PayPal.<sup>70</sup> Unlike Apple Pay and Google Pay, payment functions can occur only while a user is viewing sites through Facebook apps.

### Value Storage and Peer-to-Peer Payments

In addition to the Pay function, Facebook enables peer-to-peer payments through its Messenger app. A Messenger user must store payment details—either a debit card or a PayPal account—and can initiate payments to other users via the Messenger app. Facebook reportedly holds the funds for seconds before sending them on to the recipient’s account, although it may hold the funds until the recipient enters banking details.<sup>71</sup> The details provided regarding Facebook’s peer-to-

<sup>67</sup> Jennifer Elias and Hugh Son, “Google Abandons Plans to Offer Bank Accounts to Users,” *CNBC*, October 1, 2021, <https://www.cnbc.com/2021/10/01/google-abandons-plans-to-offer-plex-bank-accounts-to-users.html>.

<sup>68</sup> Hugh Son and Jennifer Elias, “Google’s Pivot Away from Bank Accounts Shows Why Finance Is a Tough Industry for Tech Giants,” *CNBC*, October 2, 2021, <https://www.cnbc.com/2021/10/02/googles-pivot-away-from-bank-accounts-shows-why-finance-is-a-tough-industry-for-tech-giants.html>

<sup>69</sup> The original name for the wallet and stablecoin were Calibra and Libra and were renamed to Novi and Diem in May 2020 and December 2020, respectively. See David Marcus, “Welcome to Novi,” May 26, 2020, <https://about.fb.com/news/2020/05/welcome-to-novi/>.

<sup>70</sup> Facebook, “Simplifying Payments with Facebook Pay,” press release, November 12, 2019, <https://about.fb.com/news/2019/11/simplifying-payments-with-facebook-pay/>.

<sup>71</sup> Kurt Wagner, “Facebook Messenger Adds Peer-to-Peer Payments Feature,” *Vox*, March 17, 2015, <https://www.vox.com/2015/3/17/11560350/facebook-messenger-adds-peer-to-peer-payments-feature>. It is how Facebook stores funds between payments while one user may connect banking details. In similar situations under other

peer payment tool are not as clear as those provided for similar services by other companies. For example, Facebook does not name any partner bank or credit card network in any of the available information regarding the transfers. Also, it is unclear what role Facebook or an associated bank plays in the transaction. Since Facebook is not authorized to take deposits and does not operate a credit card or wire network that could facilitate transfers independently, it presumably works with partners that do. Transfers between Messenger users are free. While peer-to-peer transfers typically occur among users that are linked on the platform, the company introduced the ability for users not already linked to request payments through links and QR codes. This obviates the need to use a non-Facebook payment app or input a new contact when individuals are not already connected.<sup>72</sup>

Over the past decade, Facebook has been involved in various store-of-value projects. Currently, it appears that the company's only value storage device is a Games card that can be redeemed to make game-related purchases. Unlike Google Pay and Apple Pay, Facebook Pay users cannot store balances.

### Stablecoin Wallet: Novi

Facebook announced it was creating a stablecoin wallet at the same time it joined Diem, the Facebook-led stablecoin project (discussed in the text box below). According to Facebook, Novi—the new name for the stablecoin wallet that was originally introduced as Calibra—“is a digital wallet for ... a new global currency powered by blockchain technology” and “available in Messenger, WhatsApp, and as a standalone app.”<sup>73</sup> Novi was originally intended to house Diem. The wallet began operating on a limited basis in October 2021 in the United States and Guatemala, facilitating transactions of USDP coin (or Pax Dollar), a stablecoin issued by Paxos, a company that has a New York Trust charter and a separate OCC conditional charter.<sup>74</sup> Facebook stopped work on creating Diem at the beginning of 2022, and it is unclear whether and how the discontinuation will alter Novi's future plans.

---

platforms, a partner bank holds funds.

<sup>72</sup> Sateesh Kumar Srinivasan, “New Chat Themes and More, Now on Messenger,” *Facebook Messenger*, June 10, 2021, <https://messengernews.fb.com/2021/06/10/new-chat-themes-and-more-now-on-messenger/>.

<sup>73</sup> Novi “Introducing Novi: Coming in 2020: Calibra,” press release, June 18, 2019, <https://www.novi.com/news>.

<sup>74</sup> CRS Report R47014, *An Analysis of Bank Charters and Selected Policy Issues*, by Andrew P. Scott

### Diem: Facebook’s Stablecoin Project<sup>75</sup>

In 2019, Facebook announced it had joined the Diem (then-Libra) Association, a consortium of companies focused on developing a stablecoin of the same name. A stablecoin is a digital asset designed to maintain a stable value by link to a fiat currency, such as the dollar, or some other asset.<sup>76</sup> Facebook was perceived and described as the driving force behind the stablecoin project.<sup>77</sup> While Diem was officially announced in June 2019, Facebook had begun working on a cryptocurrency-related project in 2017. Facebook executives associated with Diem stated that the intention of the project was to promote financial inclusion and the promotion of payments on the platform, which would also drive ad revenue.<sup>78</sup> Diem announced it was terminating Diem in January 2022. It has since sold its assets to Silvergate Bank, a California-based bank with whom Diem had been partnering.<sup>79</sup>

The project went through various phases of evolution before its ultimate demise but in essence was meant to be a stablecoin backed by cash, cash equivalents, and short-term government securities and was to be operated on open source blockchain created specifically by Diem. It was originally conceived as a stablecoin backed by a basket of currencies, with a governing structure to be located in Switzerland and regulated by the Swiss Financial Market Supervisory Authority (FINMA). However, in the ensuing years the Diem Association had scaled down ambitions, in part “to address regulatory concerns.”<sup>80</sup> Chief among these was the organization’s move to develop single-currency-backed coins (e.g., dollar-, euro-, pound-backed coins) with a focus on the dollar-backed coin.<sup>81</sup> Diem also announced in a press release in 2021 that it would shift operations from Switzerland to the United States, withdrawing its application for regulatory approval from Switzerland’s FINMA. At around the same time, it announced it was partnering with Silvergate Bank in a likely attempt to address regulatory concerns. Diem planned on registering for a money transmitter license, a common move by other digital asset platforms.<sup>82</sup>

Despite Diem supposedly winning praise from regulators, “it nevertheless became clear from ... dialogue with federal regulators that the project could not move ahead.”<sup>83</sup> In addition to regulatory scrutiny, the Diem project attracted congressional interest. The House and Senate each held two hearings on Diem, calling both Facebook’s chief executive, Mark Zuckerberg, and the head of its Novi wallet, David Marcus, to testify. A few months prior to Diem’s sale, five Senators wrote to the company to urge it to abandon its plans for Diem and the Novi stablecoin wallet that would hold it.<sup>84</sup>

Typical stablecoin and cryptocurrency wallets are similar in concept to conventional virtual wallets (such as Facebook Pay or Apple Pay). However, cryptocurrency wallets are computer

<sup>75</sup> See <https://www.diem.com/en-us/>.

<sup>76</sup> For more on stablecoins, see CRS In Focus IF11968, *Stablecoins: Background and Policy Issues*, by Eva Su.

<sup>77</sup> The Diem stablecoin was being developed by an association composed of 26 companies, including Novi, the Facebook-owned stablecoin wallet. Through development, Facebook contended that it was just a Diem Association member, but media reports detail Diem’s origins as an internal Facebook project. As such, the company was perceived as having outsized influence on its direction.

<sup>78</sup> Salvador Rodriguez, “Meet Morgan Beller, the 26-Year-Old Woman Behind Facebook’s Plan to Make Its Own Currency,” *CNBC*, July 20, 2019, <https://www.cbc.com/2019/07/20/facebook-libra-partly-created-by-female-engineer-morgan-beller.html>; and Julia Boorstin, “Facebook Launches a New Cryptocurrency Called Libra,” *CNBC*, June 18, 2019, <https://www.cbc.com/2019/06/17/facebook-announces-libra-digital-currency-calibra-digital-wallet.html>.

<sup>79</sup> Diem Association, “Statement by Diem CEO Stuart Levey on the Sale of the Diem Group’s Assets to Silvergate,” press release, January 31, 2022, <https://www.diem.com/en-us/updates/stuart-levey-statement-diem-asset-sale/>.

<sup>80</sup> Diem Association, *White Paper v2.0—Cover Letter*, April 2020, [https://wp.diem.com/en-US/wp-content/uploads/sites/23/2020/04/Libra\\_WhitePaperV2\\_April2020.pdf](https://wp.diem.com/en-US/wp-content/uploads/sites/23/2020/04/Libra_WhitePaperV2_April2020.pdf).

<sup>81</sup> Ryan Browne, “Facebook-Backed Crypto Project Diem Abandons Swiss License Application, Will Move to the U.S.,” *CNBC*, May 12, 2021, <https://www.cbc.com/2021/05/12/facebook-backed-diem-is-moving-from-switzerland-to-the-us.html>. See also the Swiss FINMA press release (at <https://www.finma.ch/en/news/2021/05/20210512-mm-diem/>) noting Diem’s decision to withdraw its payment license to focus on the U.S. market first.

<sup>82</sup> Diem Association, “Diem Announces Partnership with Silvergate and Strategic Shift to the United States,” press release, May 12, 2021, <https://www.diem.com/en-us/updates/diem-silvergate-partnership/>.

<sup>83</sup> Diem Association, “Statement by Diem CEO Stuart Levey.”

<sup>84</sup> Letter from U.S. Senator Brian Schatz, et al. to Mark Zuckerberg, chairman and CEO of Facebook, October 19, 2021, [https://www.schatz.senate.gov/imo/media/doc/schatz\\_et\\_al\\_letter\\_to\\_facebook\\_on\\_diem.pdf](https://www.schatz.senate.gov/imo/media/doc/schatz_et_al_letter_to_facebook_on_diem.pdf).

software and applications that store cryptocurrencies and other digital assets. There are typically two types of digital asset wallets. A custodial wallet is “hosted” or maintained by a third-party institution and allows an individual to buy, hold, send, trade or receive stablecoins and cryptocurrencies. A non-custodial wallet represents an asset’s location on the blockchain network and maintains the keys necessary to access and sign assets for the transmission to a blockchain. Non-custodial wallets are not hosted by third-party institutions.<sup>85</sup> Novi is a hosted custodial wallet that holds all customer assets in non-segregated wallets at one of the company’s own wallet addresses on the blockchain. Novi does not allow for direct ownership of the assets, and transactions are logged on internal records (off-chain).<sup>86</sup>

USDP is intended to have a stable exchange rate of 1 USDP to \$1. The stablecoin is backed by cash and cash equivalents.<sup>87</sup> (Paxos defines *cash equivalents* as U.S. Treasury Bills with duration of three months or shorter or overnight repurchase agreements “overcollateralized by US Treasury instruments.”<sup>88</sup>) Novi works with Coinbase Custody Trust Company, a service offered by the Coinbase digital asset exchange, to custody (or hold) the stablecoins. Coinbase Trust Company is licensed in New York as a limited purpose trust company and virtual currency and money transmitter business.<sup>89</sup> Novi controls the wallet, which means it manages user interface issues and records changes in account balances.<sup>90</sup>

In practice, users who download the Novi wallet are able to purchase USDP, store it in their wallets, and send USDP to family members, friends, or merchants that have Novi wallets and/or accept the USDP stablecoin. The transaction is free and instant. Currently, USDP sent via the Novi wallet can be sent only to other Novi wallet holders, although this may change.<sup>91</sup> Facebook account holders can also access Novi in Messenger and WhatsApp.

## Big Techs as Financial Services Third-Party Providers

Partnering with traditional financial institutions is an integral part of how Big Techs offer financial services to customers, as described above. However, Big Techs also provide services to

<sup>85</sup> Custodial wallets are often referred to as hosted wallets, as they are hosted on exchanges or other platforms. Conversely, wallets without custodians are non-custodial and may be referred to as unhosted. A third type, a cold storage wallet, is a physical device onto which digital assets can be downloaded. See U.S. Department of the Treasury, *Requirements for Certain Transactions Involving Certain Convertible Virtual Currency or Digital Assets: Frequently Asked Questions (FAQs)*, <https://home.treasury.gov/system/files/136/2020-12-18-FAQs.pdf>. See CRS In Focus IF12079, *Digital Wallets and Selected Policy Issues*, by Paul Tierno and Andrew P. Scott.

<sup>86</sup> President’s Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and OCC, *Report on Stablecoins*, November 1, 2021, [https://home.treasury.gov/system/files/136/StableCoinReport\\_Nov1\\_508.pdf](https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf).

<sup>87</sup> For more on stablecoins, see CRS In Focus IF11968, *Stablecoins: Background and Policy Issues*, by Eva Su.

<sup>88</sup> Dan Burstein, “A Regulated Stablecoin Means Having a Regulator,” Paxos, July 21, 2021, <https://paxos.com/2021/07/21/a-regulated-stablecoin-means-having-a-regulator/>.

<sup>89</sup> New York Department of Financial Services, “DFS Authorizes Coinbase Global, Inc. to Form Coinbase Custody Trust Company LLC,” press release, October 23, 2018, at [https://www.dfs.ny.gov/reports\\_and\\_publications/press\\_releases/pr1810231](https://www.dfs.ny.gov/reports_and_publications/press_releases/pr1810231).

<sup>90</sup> According to Novi’s terms, “custody of your Digital Currency will be performed by the Coinbase Custody Trust Company LLC or other authorized and licensed provider of custody and exchange traded services that we may identify from time to time. Novi controls the Wallet that holds your Digital Currency. As such, you do not directly hold the Digital Currency in Novi’s Wallet, and you do not have direct access to a Wallet’s electronic private keys. Notwithstanding, [you] own all beneficial interest in the Digital Currency in your Account.” See Novi, “Terms of Service,” <https://www.novi.com/legal/app/us/terms-of-service>.

<sup>91</sup> See Novi, “Terms of Service—Transfers to or From External Wallets,” last modified October 19, 2021, <https://www.novi.com/legal/app/us/terms-of-service>. According to the terms of service, it appears this capability will be permitted in the future.

financial institutions themselves. This model is not novel, as traditional financial services companies have worked with *third-party service providers* for decades to perform numerous “back office” functions, such as bookkeeping and accounting, printing and mailing debit and credit cards, and performing “Know Your Customer” and other customer authentication tasks, among others. A relatively new service provided by third-party providers are cloud services, an industry dominated by Big Tech. The following subsection discusses Big Techs in their function as cloud service providers (CSPs).

### Cloud Service Providers (CSPs)

Put simply, cloud users pay to use CSPs’ computing resources (e.g., servers and mainframes) rather than purchasing and maintaining their own. This allows companies to avoid certain administrative tasks, such as patching and backups, and investment costs. Cloud services also allow a company to quickly grow and then shrink its digital needs with demand, paying only for what it used.

One pre-pandemic survey revealed that nearly 91% of banks and other financial institutions were using cloud or considering using it in the near future.<sup>92</sup> Media reports suggest that since the pandemic, cloud adoption has increased as banks sought to cut costs, meet public demand for online services, and manage teams of remote workers.<sup>93</sup> Amazon Web Services (AWS), Microsoft Azure, and Google Cloud are the three largest cloud providers in the country and account for between 60% and 70% of the cloud market.<sup>94</sup> Moreover, 80% of one major consulting firm’s banking clients have primary relationships with AWS or Microsoft Azure.<sup>95</sup>

A review of recent bank partnerships with Big Tech CSPs highlight the extent of these linkages. For example, in September 2021, Wells Fargo announced plans to adopt a multi-cloud approach with a focus on third-party data centers, using both Microsoft Azure and Google Cloud.<sup>96</sup> In November 2021, Goldman Sachs announced a partnership with AWS on a “financial cloud” to provide cloud-based data and analytics solutions to its institutional clients.<sup>97</sup> In 2020, Capital One completed migration of all its data centers to AWS data centers.<sup>98</sup>

<sup>92</sup> Craig Balding et al., *Cloud Usage in the Financial Services Sector*, Cloud Security Alliance, February 21, 2020, p. 8, <https://cloudsecurityalliance.org/artifacts/cloud-usage-in-the-financial-services-sector/>.

<sup>93</sup> Patrick Jenkins, “Big Banks Look to the Cloud to Accelerate Digital Shift,” *Financial Times*, July 20, 2020, <https://www.ft.com/content/ac12f5b6-46a1-40fe-b262-27ec505126e5>.

<sup>94</sup> Felix Richter, “Amazon Leads \$150-Billion Cloud Market,” *Statista*, July 5, 2021, <https://www.statista.com/chart/18819/worldwide-market-share-of-leading-cloud-infrastructure-service-providers/>; and Gartner, “Gartner Says Worldwide IaaS Public Cloud Services Market Grew 40.7% in 2020,” press release, June 28, 2021, <https://www.gartner.com/en/newsroom/press-releases/2021-06-28-gartner-says-worldwide-iaas-public-cloud-services-market-grew-40-7-percent-in-2020>.

<sup>95</sup> Accenture, *The Cloud Imperative for the Banking Industry*, September 29, 2020, p. 7, <https://www.accenture.com/us-en/insights/banking/cloud-imperative-banking>.

<sup>96</sup> Wells Fargo, “Wells Fargo Announces New Digital Infrastructure Strategy and Strategic Partnerships with Microsoft, Google Cloud,” press release, September 15, 2021, <https://newsroom.wf.com/English/news-releases/news-release-details/2021/Wells-Fargo-Announces-New-Digital-Infrastructure-Strategy-and-Strategic-Partnerships-With-Microsoft-Google-Cloud/default.aspx>.

<sup>97</sup> Goldman Sachs, “Goldman Sachs and AWS Collaborate to Create New Data Management and Analytics Solutions for Financial Services Organizations,” press release, November 30, 2021, <https://www.goldmansachs.com/media-relations/press-releases/2021/goldman-sachs-aws-announcement-30-nov-2021.html>.

<sup>98</sup> Capital One, “Capital One Completes Migration from Data Centers to AWS, Becomes First US Bank to Announce Going All In on the Cloud,” press release, 2020, <https://aws.amazon.com/solutions/case-studies/capital-one-all-in-on-aws/>.

## Existing Regulatory Framework

The U.S. financial regulatory system has been described as fragmented, with multiple overlapping regulators, and a dual state-federal regulatory system. As a result, Big Tech operations in financial services may be subject to different types of regulation under the jurisdiction of different regulators depending on the specific offering. Currently, Big Techs are licensed by states as money services businesses for their role in facilitating payments. The retail products they offer are subject to various consumer financial protection regulations. For other products and services, Big Techs leverage partnerships with companies with the appropriate licenses and charters, as in Apple’s and Amazon’s credit card partnerships with Goldman Sachs, for example. Where they operate as CSPs to financial institutions, the Bank Service Company Act (BSCA; P.L. 87-856) provides banking regulators with authority to examine and regulate third-party vendors that provide services to banks.

### Money Services Business Licensure

The payment and peer-to-peer transfer functions offered by Big Techs make them regulated as money transmitters, a subtype of the money services business. Although certain federal laws and regulations apply to money transmitters—particularly the Bank Secrecy Act (P.L. 91-508) and the Consumer Financial Protection Bureau (CFPB) rulemakings on remittances—49 unique state regulatory frameworks make up the general oversight and regulation of these businesses.<sup>99</sup> The Big Techs discussed in this report are all registered as money services businesses in these states for their role in money transmission.<sup>100</sup> Money transmitter licenses have certain requirements for such businesses, such as rules related to application and registration, minimum net worth, examination, and holding a surety bond or some other form of financial security.<sup>101</sup>

### Consumer Financial Protection Bureau

Big Tech companies are subject to oversight by the CFPB for their role in facilitating consumer payments. The CFPB’s remit includes regulatory authority over various financial services providers including banks and nonbanks alike.<sup>102</sup> Relevant for Big Techs, its supervisory authority also applies to entities not necessarily in the aforementioned categories that the law refers to as a “larger participant of a market for other consumer financial products.”<sup>103</sup> The CFPB also has statutory authority to supervise any company that engages “in conduct that poses risks to consumers with regard to the offering or provision of consumer financial products or services.”<sup>104</sup> In April 2022, the CFPB addressed this last statutory authority, noting that, while previously

<sup>99</sup> Only Montana does not require money transmitters to be licensed. See Kelman Law, “State Level MTL Requirements for U.S. Crypto Firms,” August 11, 2020, <https://kelman.law/insights/state-level-money-transmitter-licensing-mtl-requirements-for-u-s-crypto-firms/>.

<sup>100</sup> 31 C.F.R. §1010.100 (ff)(5). See companies’ money transmitter licenses: Apple at <https://www.apple.com/legal/applepayments/license-information/>; Amazon at <https://pay.amazon.com/help/82972>; Google at <https://support.google.com/pay/answer/7160765?hl=en>; and Facebook at [https://www.facebook.com/payments\\_terms/licenses](https://www.facebook.com/payments_terms/licenses).

<sup>101</sup> See CRS Report R46486, *Telegraphs, Steamships, and Virtual Currency: An Analysis of Money Transmitter Regulation*, by Andrew P. Scott.

<sup>102</sup> See CRS In Focus IF10031, *Introduction to Financial Services: The Consumer Financial Protection Bureau (CFPB)*, by Cheryl R. Cooper and David H. Carpenter.

<sup>103</sup> P.L. 111-203, §1024 (a)(1)(B).

<sup>104</sup> P.L. 111-203, §1024 (a)(1)(C).

“dormant,” it would begin to invoke this authority over nonbanks that may pose risks to consumers.<sup>105</sup> In addition, other sections of the Dodd-Frank Wall Street Reform and Consumer Protection Act (P.L. 111-203), which established the CFPB, charge the CFPB with monitoring risks to consumers in the market of financial products and provides the authority to require companies to provide information to perform this function. The CFPB also aims to prevent institutions or individuals from “committing or engaging in an unfair, deceptive, or abusive act or practice” in offering financial products.<sup>106</sup>

Dodd-Frank also transferred rulemaking and supervisory and enforcement authority of other applicable consumer protection laws and regulations to the CFPB. These regulations regarding the provision of credit apply to the partner bank. They may also apply to Big Tech depending on the nature of the relationships, since consumer credit products that are offered by companies with wallets are treated as consumer credit whether or not the funds or account information are stored in digital wallets. Examples of such consumer protection laws are the Equal Credit Opportunity Act (15 U.S.C. §1691)—which prohibits discrimination in credit decisions based on race, color, religion, national origin, sex, marital status, or age—and the Truth in Lending Act (15 U.S.C. §§1601 et seq.), which requires disclosure of credit terms such as loan cost in consumer credit markets.

### *Electronic Funds Transfer Act*

Big Techs may also be subject to the Electronic Funds Transfer Act (EFTA; P.L. 95-630) depending on whether the transaction was payment or peer-to-peer transfer and the type of banking information supplied. Enacted in 1978, EFTA protects individuals who engage in electronic transfer of funds, including through automated teller machines, point-of-sales, electronic bill pay, and ACH, among others. While EFTA—which is implemented in Regulation E, also promulgated by the CFPB—regulates transfers from financial institutions, it may be applicable to companies that provide the transfers but do not have access to customers’ accounts.<sup>107</sup> Additionally, recent rulemakings by the CFPB, such as the 2019 prepaid card rule, effectively extend some of the protections in Regulation E to certain digital wallet transactions.<sup>108</sup>

## **Data Protection Requirements**

There are a few relevant laws that govern the use of financial data that are applicable to Big Tech’s financial services and may become more relevant as some companies increase offerings.

<sup>105</sup> CFPB, “CFPB Invokes Dormant Authority to Examine Nonbank Companies Posing Risks to Consumers,” press release, April 25, 2022, <https://www.consumerfinance.gov/about-us/newsroom/cfpb-invokes-dormant-authority-to-examine-nonbank-companies-posing-risks-to-consumers/>.

<sup>106</sup> See CFPB, “Unfair, Deceptive, or Abusive Acts or Practices (UDAAPs) Examination Procedures,” March 16, 2022, <https://www.consumerfinance.gov/compliance/supervision-examinations/unfair-deceptive-or-abusive-acts-or-practices-udaaps-examination-procedures/>.

<sup>107</sup> 12 C.F.R. §1005.14(a). Some legal analysis suggests that when banking account and routing details are supplied and used to effectuate an ACH transaction, the service provider is subject to Regulation E. For a discussion of how application of Regulation E may differ based on various payment types offered, see Jonice Gray Tucker et al., “Square Peg Meets Round Hole: Regulatory Responses to Challenges Created by Innovation in Banking,” *The Business Lawyer*, vol. 75 (Fall 2020), p. 2499, [https://www.americanbar.org/content/dam/aba/publications/business\\_lawyer/2020/75\\_4/article-innovation-in-banking-202010.pdf](https://www.americanbar.org/content/dam/aba/publications/business_lawyer/2020/75_4/article-innovation-in-banking-202010.pdf); and Carral Eric Pacifici, “Making PayPal Pay: Regulation E and Its Application to Alternative Payment Services,” *Duke Law and Technology Review*, vol. 13, no. 1 (March 31, 2015), <https://scholarship.law.duke.edu/dltr/vol13/iss1/4/>.

<sup>108</sup> More on the CFPB’s prepaid card rule can be found at <https://www.consumerfinance.gov/prepaid-rule/>.



Most Big Techs generate and collect information about users as part of their business models. The Gramm-Leach-Bliley Act (GLBA), enacted in 1999, focuses on the protection of “consumer”<sup>109</sup> “nonpublic personal information”<sup>110</sup> (NPI). GLBA (1) prohibits sharing NPI with third parties unless a company provides notice to consumer and offers the ability to “opt out”; (2) requires providing privacy notices to consumers; and (3) requires that third parties secure and safeguard NPI from unauthorized access. In particular, GLBA requires the companies to provide privacy notices to consumers about how they use their data and to safeguard the confidentiality of NPI from unauthorized access, but they can typically share information with affiliates and third parties unless users opt out.

Considering the partnerships that have become prevalent between Big Techs and existing financial companies, the Fair Credit Reporting Act (FCRA; 15 U.S.C. §§1681-1681x), which governs data shared between credit reporting agencies and related companies, may be relevant in some instances but is more likely a factor for the financial partner companies. FCRA does not require parties to notify customers before collecting or disclosing information but only that companies ensure that information is accurate and limit uses to certain permissible activities.<sup>111</sup>

## Bank Service Company Act

The BSCA (P.L. 87-856) provides banking regulators with authority to examine and regulate third-party vendors that provide services to banks. Big Techs are subject to banking regulatory exams according to the BSCA in circumstances where they serve as CSPs to banks. Big Techs may also be subject to banking regulatory exams according to the BSCA now or in the future depending on the nature of their relationships with banks.

## Big Tech Policy Issues

The rise of Big Tech in financial services raises various policy issues. Many of the policy issues considered below stem directly from the “Existing Regulatory Framework” section above. These issues include whether that framework is adequate and if Big Tech’s rapid integration into the financial system introduces systemic risk. Relatedly, the aforementioned fragmentation of the financial regulatory framework could encourage regulatory arbitrage. Another key policy issue centers on use of data. Specifically, while the use of alternative data may enable financial inclusion, it may also create challenges for privacy and data security. Still other policy issues are moral hazard, algorithmic bias, and cloud and cyber risk.

## Is the Existing Regulatory Framework Adequate?

The payment and peer-to-peer services offered by Big Tech are popular in the United States. For context, the number of people using mobile peer-to-peer services (including fintechs and Big

<sup>109</sup> GLBA defines *consumer* as an “individual who obtains, from a financial institution, financial products or services which are to be used primarily for personal, family, or household purposes” or “the legal representative of such an individual.” 15 U.S.C. §6809(9).

<sup>110</sup> GLBA defines *nonpublic personal information* as “personally identifiable financial information” that is not “publicly available” and is either “provided by a consumer to a financial institution,” “resulting from any transaction with the consumer or any service performed for the consumer,” or “otherwise obtained by the financial institution.” 15 U.S.C. §6809(4).

<sup>111</sup> For more on data protection laws, see CRS Report R45631, *Data Protection Law: An Overview*, by Stephen P. Mulligan and Chris D. Linebaugh.

Techs) was expected to reach more than 73 million users in the United States in 2020, with value transferred expected to top \$1 trillion in 2023.<sup>112</sup> Another survey found that 42% of individuals said they had used the service at some point in the past 12 months, making it more popular than bank transfers.<sup>113</sup> App-based mobile payments are even more pervasive, surpassing 100 million users in 2021.<sup>114</sup> Increasing use and popularity of Big Tech’s payment and transfer services have raised questions about whether the existing regulatory structure—which is defined as activity based and espouses the principal of “same-activity-same-regulation”<sup>115</sup>—provides adequate regulatory oversight of such services. Big Techs already technically satisfy current activity-based requirements, but at least some believe those requirements may not be sufficient to mitigate existing or future risks. BIS, for instance, has implicitly criticized the approach, noting that “the current licensing requirements on payment service providers ... were formulated with small remittance service providers in mind and will fall short of addressing the very different and far-reaching challenges associated with dominant big tech platforms.”<sup>116</sup>

Relevant to this discussion is whether an activities-based regulatory approach may be susceptible to regulatory arbitrage generally and the extent to which Big Tech’s actions may be perceived as regulatory arbitrage specifically. Regulatory arbitrage occurs when a company is able to select its regulatory regime not based on the economic and financial characteristics of the activities the company will perform but instead based on which regime has the least costly requirements.<sup>117</sup> This can be problematic if the regulation selected does not adequately account for the full scale of risks posed by an activity or combination thereof. Moreover, it can create broader challenges if firms seek regulatory regimes they perceive as more favorable, potentially amplifying market risk.<sup>118</sup> The concept of regulatory arbitrage is not unique to Big Tech, and it is not clear that Big Tech is engaging in regulatory arbitrage. However, it could be a particularly concerning possibility because of the scale of the companies and activities involved. Further, in cases where Big Techs both process payments—which resemble bank deposits—and store value for customers, they are performing activities that are arguably bank-like, but they are nevertheless subject to relatively light federal regulation.

<sup>112</sup> Amy He, “Strong Growth from Venmo and Zelle Drives P2P Transaction Volume,” *eMarketer*, November 5, 2019, <https://www.emarketer.com/content/strong-growth-from-venmo-and-zelle-drives-p2p-transaction-volume>. This estimate was pre-pandemic, so variations from estimates are likely. See also Adriana Nunez, “Zelle Records Explosive Q2 Growth but Faces Tight Competition from Peer-to-Peer Payments Rivals,” *eMarketer*, August 2, 2021, <https://www.emarketer.com/content/zelle-records-explosive-q2-growth-faces-tight-competition-peer-to-peer-payments-rivals>.

<sup>113</sup> *Statista*, “How Have You Transferred Money to Friends and Acquaintances in the Past 12 Months?,” press release, February 1, 2022, <https://www.statista.com/forecasts/997123/peer-to-peer-payments-in-the-us>.

<sup>114</sup> *eMarketer*, “US Payment Users Will Surpass 100 Million This Year,” press release, March 31, 2021, <https://www.emarketer.com/newsroom/index.php/us-payment-users-will-surpass-100-million-this-year/>.

<sup>115</sup> Fernando Restoy, “Regulating Fintech: Is an Activity-Based Approach the Solution?,” (virtual), speech to the fintech working group at the European Parliament, June 16, 2021, <https://www.bis.org/speeches/sp210616.htm>.

<sup>116</sup> Agustín Carstens et al., “Regulating Big Techs in Finance,” BIS, *BIS Bulletin*, no. 45 (2021), p. 7, <https://www.bis.org/publ/bisbull45.pdf>.

<sup>117</sup> *Regulatory arbitrage* is defined as “financial transactions designed to reduce costs or capture profit opportunities created by differential regulations or laws.” See Frank Partnoy, “Financial Derivatives and the Costs of Regulatory Arbitrage,” *Journal of Corporation Law*, vol. 22 (1997), p. 211.

<sup>118</sup> Parma Bains, Nobuyasu Sugimoto, and Christopher Wilson, “BigTech in Financial Services: Regulatory Approaches and Architecture,” *IMF*, January 24, 2022, pp. 9, 12, <https://www.elibrary.imf.org/view/journals/063/2022/002/article-A001-en.xml>.

As a result, some regulatory bodies have begun considering an entity-based approach to complement the activities-based approach.<sup>119</sup> This would provide for one or multiple regulators to oversee all actions of a company. One reason an entity-based approach could arguably have advantages over an activities-based approach is if Big Tech posed systemic risk.

## Systemic Risk and Market Power

Systemic risk is the risk that the failure of one institution, group of institutions, or industry may cause instability throughout the broader financial system. For obvious reasons, bigger and more interconnected institutions in finance are more likely to be systemically important. Although few firms are as large and interconnected in nonfinancial markets as Big Tech is, there is little consensus as to whether a nonfinancial firm can pose systemic risk. The key question here is whether Big Tech’s financial activities are systemically important. But the size and scope of these companies and thus their roles in the U.S. financial system is hard to quantify precisely. For starters, much of Big Tech’s role is conveyed via partnerships with banks that do not publicly disclose the size of the partnerships. According to one report, Big Tech extended roughly \$10 billion of credit in the United States in 2019.<sup>120</sup> Notably, this figure does not include non-credit products, the value of services produced by partnerships, transfers occurring on the platform (for payments, see figures in “Is the Existing Regulatory Framework Adequate?”), or how the services may have changed in light of shifting priorities and the pandemic in the ensuing three years. Regardless, even the global figure (\$570 billion in credit) pales in comparison to U.S. banking assets of \$22.76 trillion. Thus these figures arguably support the conclusion reached by some observers that, while Big Tech may account for a higher share of financial services in some places, it is not yet of a scale in most jurisdictions to be systemically important.<sup>121</sup>

Even observers who downplay Big Tech’s current share of financial services believe Big Tech in finance may introduce systemic risk implications. First, Big Tech companies can grow quickly and may use customer information from other business lines and benefit from the network effects of digital services—what some refer to as the “data-network activities” or “DNA” loop.<sup>122</sup> This means that one or some combination of Big Techs may become systemically important in the future. For example, while the broader set of circumstances in China is quite different, its own Big Tech firms had previously become “too big to fail,”<sup>123</sup> according to one BIS report, prompting regulatory crackdown. Another argument focuses more on how rapid growth by non-bank Big Techs could upend the traditional banking model (e.g., scarcer deposits pressuring higher rates), destabilizing the financial system in the short run.<sup>124</sup>

There are other systemic issues around Big Tech’s specific role in payments and wallet operations:

- **Mobile wallets.** Under Title VIII of the Dodd-Frank Act, a handful of traditional wholesale payment system operators have been designated as “systemically important financial market utilities” and are therefore subject to heightened risk

<sup>119</sup> Entity-based rules acknowledge and attempt to account for the fact that risks rise not only from the provision of service but from the combination of services provided by a single entity.

<sup>120</sup> Giulio Cornelli et al., “Fintech and Big Tech Credit Markets Around the World,” *Vox EU CEPR*, November 20, 2020, <https://voxeu.org/article/fintech-and-big-tech-credit-markets-around-world>.

<sup>121</sup> Adrian, *Big Tech in Financial Services*.

<sup>122</sup> Carstens et al., “Regulating Big Techs in Finance,” p. 3.

<sup>123</sup> Feyen et al., *Fintech and the Digital Transformation of Financial Services*.

<sup>124</sup> Oung, *Big Tech in Finance*.

management standards because of their key role in providing the “plumbing” of the financial system.<sup>125</sup> It is unclear whether a wallet provider could be designated under Title VIII authority if one were deemed systemically important.<sup>126</sup> Nevertheless international regulatory bodies, such as the BIS and FSB, have questioned whether regulators, such as central banks, “need to introduce specific safeguards to guarantee sufficient operational resilience” for companies “offering systemically important payment services to a significant section of the population.”<sup>127</sup>

Even if wallets are not a systemically important activity, they may provide these companies with an entree to offer consumers an expanding suite of financial services and products.<sup>128</sup> In addition, commercial (i.e., non-financial) enterprises’ entry into payments, which has traditionally been the realm of banking, represents a joining of industries typically kept separate as one of the foundational tenets of U.S. banking policy (see “Banking” below).

- **Crypto wallets.** While Novi, the only crypto wallet considered in this report, has a money transmitter license, some observers, including some Members of Congress, have commented that rules originally meant to regulate smaller remittance facilitators may not be appropriate for the scale of operation imagined by Novi.<sup>129</sup> The President’s Working Group on Financial Markets (PWG) issued a report that addresses systemic risk as it relates to digital asset wallets and stablecoins. Specifically, the PWG notes that stablecoins’ potential to scale rapidly and inherent run risk could pose systemic risk if one member in the stablecoin arrangement, including a digital asset wallet provider, were to experience distress or failure.<sup>130</sup>

In addition, the PWG report notes that the combination of, for example, a company hosting a custodial wallet and issuing a stablecoin could result in an excessive concentration of economic power in the real economy and decreased competition. This is not as much of an immediate concern now that Facebook abandoned its plans for Diem. But it may increase again if stablecoins continue to grow rapidly or Big Techs show renewed ambitions for a stablecoin. Nevertheless, the PWG has recommended that custodial wallet holders be subject to “appropriate federal oversight.”<sup>131</sup>

Another concern related to company size is the potential to exercise anti-competitive market power. Increased market power may follow growth. Some of the same attributes that foster growth—such as economies of scale, network effects, and lower costs—may also allow Big Tech to gain further market power. In fact, CFPB Director Rohit Chopra addressed this market power directly soon after Apple began offering its BNPL product. Specifically, he questioned whether

<sup>125</sup> See CRS Report R47026, *Financial Regulation: Systemic Risk*, by Marc Labonte.

<sup>126</sup> To date, no retail payment system or provider has been designated under Title VIII.

<sup>127</sup> Carstens et al., “Regulating Big Techs in Finance,” p. 7.

<sup>128</sup> China provides an example where retail digital payments are now dominated by a couple of “Big Tech” commercial firms.

<sup>129</sup> “To be clear, your ability to secure state-issued money transmitter licenses is not equivalent to obtaining the blessing of ‘all U.S. regulators,’ as you said in your testimony two years ago.” Letter from Schatz et al. to Zuckerberg. This letter pre-dates the sale of Diem; it is unclear whether concern remains regarding the Novi wallet on its own.

<sup>130</sup> *Report on Stablecoins*, p. 14.

<sup>131</sup> *Report on Stablecoins*, p. 17.

other firms would be able to compete and if partnering merchants would be given the choice to opt out, and generally noted that offering the product is “inextricably linked to the desire to dominate the digital wallet.”<sup>132</sup> As market share and power grow, Big Techs may no longer need to or choose to pass along savings and, subsequently, raise prices.<sup>133</sup> Moreover, it is possible that gains in financial services may help Big Tech enhance market power in nonfinancial industries.

## Deposit Insurance

Various Big Techs allow users to store value on their platforms, usually via their wallet offerings. Funds stored on a wallet are not technically deposits (though the degree to which they are functionally different is a matter of debate) and therefore generally not eligible for FDIC deposit insurance. Banks, in contrast, are required to insure deposits to protect account holders and to prevent destabilizing runs on deposits. Meanwhile, some wallets provide what is called “pass through insurance” if a consumer transfers money from a direct deposit to a wallet account. In this scenario, the wallet provider would act as a custodial agent and deposit the money into an FDIC-insured bank account.<sup>134</sup>

Where insurance is not offered, policymakers may wish to consider whether wallet users are under the false impression that their wallet balances are insured, whether uninsured balances pose systemic risk, and whether deposit insurance should be mandatory for all general-purpose wallet balances.

## Data Rights

Market observers have expressed alarm that some of Big Tech’s information practices, including the intentional collection and monetization of private data, create privacy and security concerns.<sup>135</sup> According to one survey by the BIS, nearly 60% of respondents trust Big Techs least, as compared to government, fintechs, and traditional financial institutions.<sup>136</sup> Who owns and can access this information is also a pressing issue. Current attitudes and the potential expansion of Big Techs further into financial services, with its access to more private information, may elicit policy responses.

One way this may play out in the policy sphere in the near term is through the recent CFPB proposed rulemaking for Section 1033 of the Dodd-Frank Act. Section 1033 provides customers with the right to access their financial information. It also requires any company or individual offering a financial service<sup>137</sup> to provide any information it has collected in offering or provision of the service to any consumer that requests it. The section, which has never been implemented

<sup>132</sup> Stefania Palma, “Top US Regulator Fires Warning Shot After Apple’s Push into Lending,” *The Financial Times*, July 27, 2022, at <https://www.ft.com/content/399c177f-e5da-491a-b653-afe953bbdce0>.

<sup>133</sup> Carstens et al., “Regulating Big Techs in Finance,” p. 5.

<sup>134</sup> For example, see PayPal’s terms on their pass-through insurance program at <https://www.paypal.com/myaccount/bundle/terms>.

<sup>135</sup> Tom Calver and Joe Miller, “What Tech Giants Really Do with Your Data,” *BBC News*, July 6, 2018, <https://www.bbc.com/news/business-44702483>; and CRS Legal Sidebar LSB10309, *Regulating Big Tech: Legal Implications*, coordinated by Valerie C. Brannon.

<sup>136</sup> Carstens et al., “Regulating Big Techs in Finance,” p. 7.

<sup>137</sup> “The term ‘covered person’ means—(A) any person that engages in offering or providing a consumer financial product or service; and (B) any affiliate of a person described in subparagraph (A) if such affiliate acts as a service provider to such person.” 12 U.S.C. 5481(6).

through rulemaking,<sup>138</sup> would provide consumers with greater access to their financial data and possibly could facilitate taking their data and their business elsewhere—a requirement with which a Big Tech may have to comply.

In October 2021, in advance of a potential rulemaking, the CFPB issued an order for Amazon, Apple, Google, and Facebook (among others) to file information on payments products,<sup>139</sup> including plans and offerings, with the agency. The agency did so to monitor risks to the public and to learn more about how the companies operate and safeguard the privacy of customer data. This includes determining whether the operators will, as CFPB notes, “engage in invasive financial surveillance and combine the data they collect on consumers with their geolocation and browsing data” and whether they will “use this data to deepen behavioral advertising, engage in price discrimination, or sell to third parties.”<sup>140</sup>

The proposed rulemaking for Section 1033 raised issues related to data portability and the broader concept of *open banking*<sup>141</sup>—a term that refers to “the practice of giving financial services firms access to customer banking and other financial data to facilitate the development of new types of products and services for consumers.”<sup>142</sup> In a relatively closed financial ecosystem, where banks typically serve as gatekeepers to consumers’ financial information, data portability may make it easier for Big Tech to leverage data and offer targeted products.<sup>143</sup> As financial services become ever more technology and data driven, Big Tech, with its trove of data and technological capacity, may be required to provide information it has amassed and be subjected to greater oversight.

## Financial Inclusion

According to the World Bank Group, financial inclusion means “that individuals and businesses have access to useful and affordable financial products and services that meet their needs—transactions, payments, savings, credit and insurance—delivered in a responsible and sustainable way.”<sup>144</sup> The potential to increase financial inclusion has long been cited as one of fintech’s *raison d’être*. Broadly, while the financial inclusion argument of Big Tech and fintechs alike is arguably mostly applicable in developing markets, observers have noted the need in the United States as well, where black and Hispanic individuals are less likely than white counterparts to have bank accounts and more likely to rely on alternative financial systems.<sup>145</sup> There are some

<sup>138</sup> See Section IV at <https://www.federalregister.gov/documents/2020/11/06/2020-23723/consumer-access-to-financial-records>. For more on Rule 1033, see CRS Insight IN11745, *Open Banking, Data Sharing, and the CFPB’s 1033 Rulemaking*, by Cheryl R. Cooper.

<sup>139</sup> The list includes PayPal and Square.

<sup>140</sup> Rohit Chopra, *Statement Regarding the CFPB’s Inquiry into Big Tech Payment Platforms*, Consumer Financial Protection Bureau, October 21, 2021, <https://www.consumerfinance.gov/about-us/newsroom/statement-regarding-the-cfpbs-inquiry-into-big-tech-payment-platforms/>.

<sup>141</sup> In July 2021 the Biden Administration issued an executive order urging the CFPB to consider “commencing or continuing a rulemaking under section 1033 of the Dodd-Frank Act to facilitate the portability of consumer financial transaction data so consumers can more easily switch financial institutions and use new, innovative financial products.”

<sup>142</sup> See CRS Insight IN11745, *Open Banking, Data Sharing, and the CFPB’s 1033 Rulemaking*, by Cheryl R. Cooper.

<sup>143</sup> See Evan Weinberger and Lydia Beyoud, “Apple, Google, Amazon Probed by Biden Consumer Finance Watchdog,” *Bloomberg Law*, October 20, 2021, <https://news.bloomberglaw.com/banking-law/cfpb-to-press-apple-google-amazon-on-consumer-data-practices>; and Evan Weinberger “Did Biden Open Up Banking? The President’s CFPB Order Explained,” *Bloomberg Law*, July 12, 2021, <https://news.bloomberglaw.com/banking-law/did-biden-open-up-banking-the-presidents-cfpb-order-explained>.

<sup>144</sup> See World Bank Group, “Financial Inclusion,” <https://www.worldbank.org/en/topic/financialinclusion/overview#1>.

<sup>145</sup> Loretta J. Mester, “Fintech, Bigtech, and Financial Inclusion,” speech at Fourth Annual Fintech Conference, Federal Reserve Bank of Philadelphia, (via videoconference), November 9, 2020, p. 2, <https://www.clevelandfed.org/>

features of the discussion particular to Big Tech, including the previously referenced (see the “Environment” section above) ability to rebundle services based on economies of scale and network effects and their knowledge of preferences from their primary business, that potentially enable them to deliver services to underserved markets affordably.<sup>146</sup> At the same time, however, while Big Tech’s lower costs may bring previously marginalized consumers into the system, some observers have expressed concern that as they dominate a market, Big Techs may not always pass along savings and may be in a position to raise prices.<sup>147</sup>

## Algorithmic Bias and Moral Hazard

Although Big Tech was initially praised for the ability to provide services to previously underserved communities, its use of alternative data and artificial intelligence has raised concerns over whether its practices can avoid algorithmic bias. Algorithmic bias in finance refers to the unintended generation of bias (advantaging and/or disadvantaging one class of user based on race, age, or some other protected class) based on algorithms or machine learning and artificial-intelligence-based decisionmaking.<sup>148</sup> Treasury addressed these trade-offs in a 2016 report on marketplace lending, noting that “while data-driven algorithms may expedite credit assessments and reduce costs, they also carry the risk of disparate impact in credit outcomes and the potential for fair lending violations.”<sup>149</sup>

One prominent example of this issue arose in 2019, when, shortly after the release of the Apple Card, various high-profile card users alleged gender bias. An investigation by the New York Department of Financial Services (New York’s state financial regulator) ultimately found no unlawful discrimination against applications. Nevertheless, it highlights risks and perception thereof from an increasing reliance on machine learning in financial decisionmaking, including the proverbial “black box” problem and “lack of explainability.”<sup>150</sup> These terms refer to the concept that certain models may be so complex that even their creators cannot explain why decisions were made. Also, the extent to which coverage of the incident focuses on Apple belies the fact that Goldman Sachs is ultimately responsible for the underwriting decisions.<sup>151</sup> As such, it suggests that reputational risk can flow both ways (from Big Tech to a traditional bank and vice versa) and that a Big Tech may still be held responsible for decisions made by its partners.

Finally, there is some speculation that the partnership model employed by Big Techs and legacy financial firms may create moral hazard. This concern assumes that because of their access to consumer data, Big Techs can “target their customers’ behavioral biases” and encourage them to take on excessive risk.<sup>152</sup> It is somewhat analogous to the originate-to-distribute mortgage model,

---

newsroom-and-events/speeches/sp-20201109-fintech-bigtech-and-financial-inclusion.

<sup>146</sup> Adrian, *Big Tech in Financial Services*.

<sup>147</sup> Carstens et al., “Regulating Big Techs in Finance,” p. 5.

<sup>148</sup> Aaron Klein, “Reducing Bias in AI-Based Financial Services,” Brookings Institution, July 10, 2020, <https://www.brookings.edu/research/reducing-bias-in-ai-based-financial-services/>.

<sup>149</sup> U.S. Department of the Treasury, *Opportunities and Challenges in Online Marketplace Lending*, May 10, 2016, p. 1, [https://home.treasury.gov/system/files/231/Opportunities\\_and\\_Challenges\\_in\\_Online\\_Marketplace\\_Lending\\_white\\_paper.pdf](https://home.treasury.gov/system/files/231/Opportunities_and_Challenges_in_Online_Marketplace_Lending_white_paper.pdf).

<sup>150</sup> Governor Lael Brainard, “What Are We Learning about Artificial Intelligence in Financial Services?,” speech at Fintech and the New Financial Landscape conference, Philadelphia, PA, November 13, 2018, <https://www.federalreserve.gov/newsevents/speech/brainard20181113a.htm>.

<sup>151</sup> Goldman Sachs, “Goldman Sachs Partners with Apple on a Game-Changing Credit Card,” press release, 2019, <https://www.goldmansachs.com/our-firm/history/moments/2019-apple-card.html>.

<sup>152</sup> Barry Eichengreen, “The Challenge of Big Tech Finance,” *Project Syndicate*, April 9, 2021, <https://www.project-syndicate.org/commentary/regulatory-challenges-of-big-tech-finance-by-barry-eichengreen-2021-04>.

where a principal-agent problem resulted in overly lax underwriting. Since the Big Tech merely provides the technology, while the traditional financial institution has credit exposure, there is little if any incentive to be particularly discerning in how the Big Tech identifies and recommends customers.

## Cloud Cyber Risk, Concentration Risk, and Other CSP Policy Issues

Big Tech generates policy issues related to its role in providing cloud services to financial institutions, as approximately two-thirds of the cloud market is concentrated in AWS, Microsoft Azure, and Google Cloud. Exposures to cyber risk change for financial institutions with increased reliance on advanced IT solutions, including cloud, and it is not always clear whether those changes increase or decrease overall cyber risk. On one hand, CSPs are arguably more adept at managing certain types of attacks as they have specialized workers managing security across all their clients. On the other hand, banks are targeted by unique adversaries employing novel attacks because of their high exposure to IT and their role in credit intermediation. Congress has long debated the optimal role for federal policy in cybersecurity.<sup>153</sup>

A cyberattack on a Big Tech CSP could pose systemic risk. In its 2019 annual report, the Financial Stability Oversight Council discussed the risk that stems from high concentration among few providers, noting that a “service interruption or cyber event at a critical vendor with a large number of clients could result in widespread disruption in access to financial data and could impair the flow of financial transactions.”<sup>154</sup> Traditional bank risks such as market and liquidity risks, not normally cloud computing concerns, can rise if the banks’ abilities to transact are impeded by cloud-related disruptions.

The role of Big Techs as CSPs also raises antitrust and additional supervision and regulatory-based policy issues. Obstacles to data portability, such as use of proprietary technology and restrictive vendor contracts, may make switching CSPs difficult. In addition, barriers to entry for new providers are high because entry into the cloud market requires massive investments in IT infrastructure. Accordingly, competition issues in the cloud industry may be of interest to Congress. Various antitrust bills were introduced in Congress in summer 2021 to curb the power of large technology platforms.<sup>155</sup> H.R. 3849—which would impose interoperability and data-portability requirements on certain tech platforms—may be relevant for CSPs, though it is unclear whether the bill as drafted would encompass the cloud businesses of Big Tech. In June 2021, the House Judiciary Committee ordered the legislation to be reported. As Congress considers the bill, it may seek to clarify whether CSPs would be subject to its requirements.

Also, bank regulators may examine CSPs more closely as cloud services become more integral to bank operations. This may lead to technical resource mismatches as well as relationship management issues for CSPs that may not be accustomed to thorough bank-like examinations. Close integration between banks and cloud providers may accelerate regulators’ call for regular examination of CSPs to monitor aspects of their relationships with banks including security and financial system stability risks.

---

<sup>153</sup> See CRS Report R46926, *Federal Cybersecurity: Background and Issues for Congress*, by Chris Jaikaran.

<sup>154</sup> Financial Stability Oversight Council, *2019 Annual Report*, December 4, 2019, p. 97, <https://home.treasury.gov/system/files/261/FSOC2019AnnualReport.pdf>.

<sup>155</sup> For more on these bills, see CRS Report R46875, *The Big Tech Antitrust Bills*, by Jay B. Sykes.



## Future Possibilities of Big Tech in Finance

This report generally provides an overview of Big Tech’s current financial offerings, how the existing regulatory framework applies to these operations, and related policy implications. However, should Big Tech seek to expand its offerings, as its actions have sometimes suggested and some observers have speculated, the relevant concerns may change considerably. At the same time, regulatory treatment may change irrespective of Big Tech’s activities, as policymakers and lawmakers continue to assess various Big Tech financial-services-related activities, such as data practices, and potential antitrust issues. For policymakers concerned about the potential implications of becoming dominant in financial markets, financial products where Big Tech could expand is also relevant for current policy.

This section considers the potential evolution of financial services offered by Big Tech and the attendant policy implications. While it considers possible alternatives and issues that may arise from possible paths, the report does not assume that any one is more or less likely or that the companies are considering pursuing any particular strategy.

### Investment Advisory Services

Investment advisory services refer to professionals that provide advice on securities to investors and include asset, portfolio, and wealth managers.<sup>156</sup> More than 90% of wealth managers believe Big Tech companies will enter the market, with greater than 50% expecting significant disruption if it happens, according to a November 2021 survey.<sup>157</sup> Over the past decade, fintechs have entered the investment management area, using machine learning to offer services such as robo-advising and retail stock trading. If Big Tech companies were to consider this approach, they would have to register as investment advisors with the Securities and Exchange Commission. They may also be required to register with the Financial Industry Regulatory Authority if they plan to offer brokerage services.

### Insurance

According to one major management consulting firm, “[o]utside tech-powered giants ... are shaping the insurance market.”<sup>158</sup> Both Amazon and Google have partnered with insurance companies, much like they did banks, to offer various insurance products.<sup>159</sup> Any intention to push further without relying on a partner would invite regulation at the state level,<sup>160</sup> where most of the regulation of insurance occurs:

<sup>156</sup> See Financial Industry Regulatory Authority, “Investment Advisers,” <https://www.finra.org/investors/learn-to-invest/choosing-investment-professional/investment-advisers>.

<sup>157</sup> PRNewswire, “Big Tech Expected to Disrupt Wealth Management—Capco-Stevens School of Business Survey Finds 92% of Wealth Managers Foresee Upheaval, with 50% Expecting a ‘Significant’ Effect,” press release, November 10, 2021, <https://www.businesswire.com/news/home/20211110005302/en/Big-Tech-Expected-to-Disrupt-Wealth-Management-%E2%80%93-Capco-Stevens-School-of-Business-Survey-Finds-92-of-Wealth-Managers-Foresee-Upheaval-With-50-Expecting-a-%E2%80%9CSignificant%E2%80%9D-Effect>.

<sup>158</sup> Simon Behm et al., “Tech-Driven Insurers: How to Thrive in 2030,” *McKinsey and Company*, August 17, 2021, <https://www.mckinsey.com/industries/financial-services/our-insights/tech-driven-insurers-how-to-thrive-in-2030>.

<sup>159</sup> Behm et al., “Tech-Driven Insurers;” and Lyle Adriano, “Amazon Dips Its Toes Into Insurance with New Partnership,” *Insurance Business America*, March 18, 2021, <https://www.insurancebusinessmag.com/us/news/technology/amazon-dips-its-toes-into-insurance-with-new-partnership-249646.aspx>.

<sup>160</sup> This could pose another example of a state model unable to regulate such a large company.

The role of the federal government in regulating private insurance is relatively limited compared with its role in banking and securities. Insurance companies, unlike banks and securities firms, have been chartered and regulated solely by the states for the past 150 years. There are no federal regulators of insurance akin to those for securities or banks, such as the Securities and Exchange Commission (SEC) or the Office of the Comptroller of the Currency (OCC), respectively.<sup>161</sup>

## Banking

There are few issues at the nexus of technology and finance that generate greater interest and speculation than the prospect of Big Tech’s entry into banking. As it stands, some have pursued nonbank lending. The “Plex” project (see “Google “Plex” textbox), which Google abandoned in late 2021, was the most direct step to date by the industry, seeming to confirm collective and long-held suspicions that Big Techs were interested in becoming banks. However, if any of the companies were to consider an expansion into more bank-like activities, such as accepting deposits, their only option would likely be to pursue an industrial loan company charter, which has a complex framework and history.

## Legislative Framework

Generally, U.S. law prohibits commercial enterprises (i.e., nonfinancial firms) from operating banks. Since at least as far back as the Glass-Steagall Act (Sections 20, 21, 26, and 32 of the Banking Act of 1933; P.L. 73-66), and then in the Bank Holding Company Act, Congress has sought to separate banking enterprises that take deposits and make loans from commercial enterprises producing and selling goods and services.<sup>162</sup> In short, the separation aims to prevent one company from both offering a product and the loan to purchase that product funded with deposits publicly guaranteed by FDIC insurance.

One exception to this general separation of commerce and banking is the role of industrial loan companies (ILCs). ILCs are financial institutions chartered in six states<sup>163</sup> that function much like typical banks. Unlike other banks, ILCs can be owned by nonfinancial, commercial firms. Under the Bank Holding Company Act (12 U.S.C. 1841 (c)(2)(h)), ILCs, provided they meet certain criteria, are exempt from the definition of *bank*. Pursuant to that exemption, a company that owns a bank is not a bank holding company and as such is not subject to oversight by the Federal Reserve. However, ILCs are considered state banks for the purposes of the FDIC Act (12 U.S.C. 1813 (a)(2)). Under that law, they are defined as banks and thus eligible for deposit insurance. Thus, this patchwork legal framework creates the opportunity for a company with other commercial interests to offer banking services, obtain deposit insurance, and operate nationally without being subject to consolidated supervision by the Federal Reserve System.<sup>164</sup>

<sup>161</sup> CRS In Focus IF10043, *Introduction to Financial Services: Insurance*, by Baird Webel.

<sup>162</sup> Independent Community Bankers of America, *Industrial Loan Companies: Closing the Loophole to Prevent Consumer and Systemic Harm*, March 2019, pp. 1-4, <https://www.icba.org/docs/default-source/icfdistorba/advocacy-documents/reports/ilc-white-paper.pdf>; and CRS Report R46489, *Industrial Loan Companies (ILCs): Background and Policy Issues*, by David W. Perkins.

<sup>163</sup> California, Colorado, Hawaii, Indiana, Minnesota, Nevada, and Utah. See Federal Financial Institutions Examination Council, “Institution Categories,” <https://www.ffiec.gov/npw/Help/InstitutionTypes>.

<sup>164</sup> See CRS In Focus IF11374, *Industrial Loan Companies and Fintech in Banking*, by David W. Perkins.

## Relevant History

Historically, nonfinancial companies interested in a banking license have taken the ILC approach. In the mid-2000s, both Walmart and Home Depot began unsuccessful attempts to establish or acquire ILCs.<sup>165</sup> Both ultimately dropped their attempts in the face of public opposition, after which the FDIC imposed an official moratorium on considering new insurance applications from ILCs between July 2006 and January 2008, and Section 603 of the Dodd-Frank Act imposed another temporary statutory moratorium between July 2010 and July 2013. Though the official moratoria had ended, the FDIC did not grant an ILC insurance application again until March 2020, when it approved two ILCs—Nelnet and Square<sup>166</sup>—for deposit insurance. Square offers many of the same services as the Big Techs in this report, including mobile wallet with payment and peer-to-peer transfer functions.<sup>167</sup>

Also relevant is an outstanding application for an ILC charter by Japanese e-commerce company Rakuten. Rakuten filed its most recent ILC application on January 15, 2021, following two previous applications that it withdrew before rulings. Rakuten is sometimes referred to as the “Amazon of Japan”<sup>168</sup> and has a similar business model to U.S. Big Tech companies. As such, any decision by the FDIC will have regulatory arbitrage considerations (see “Systemic Risk” above) and is likely to be interpreted by others with similar models considering entering banking. Theoretically, a Big Tech with an ILC charter could benefit from access to deposits and deposit insurance without the increased regulatory burden and costs of consolidated financial oversight by the Federal Reserve System.

## Author Information

Paul Tierno  
Analyst in Financial Economics

---

<sup>165</sup> Michelle Clark Neely, “Industrial Loan Companies Come Out of the Shadows,” Federal Reserve Bank of St. Louis, July 1, 2007, <https://www.stlouisfed.org/publications/regional-economist/july-2007/industrial-loan-companies-come-out-of-the-shadows>.

<sup>166</sup> Square’s parent changed its name to Block on December 1, 2021. Block, “Square, Inc. Changes Name to Block,” press release, December 1, 2021, <https://squareup.com/us/en/press/square-changes-name-to-block>.

<sup>167</sup> At \$61.54 billion in March 2022, Square’s parent company, Block, is significantly smaller than its Big Tech counterparts.

<sup>168</sup> Brendan Pedersen, “Rakuten Withdrawal a Relief for Banks, but ILC Saga’s Far from Over,” *American Banker*, August 26, 2020, <https://www.americanbanker.com/news/rakuten-withdrawal-a-relief-for-banks-but-ilc-sagas-far-from-over>.

---

## **Disclaimer**

This document was prepared by the Congressional Research Service (CRS). CRS serves as nonpartisan shared staff to congressional committees and Members of Congress. It operates solely at the behest of and under the direction of Congress. Information in a CRS Report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to Members of Congress in connection with CRS's institutional role. CRS Reports, as a work of the United States Government, are not subject to copyright protection in the United States. Any CRS Report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS Report may include copyrighted images or material from a third party, you may need to obtain the permission of the copyright holder if you wish to copy or otherwise use copyrighted material.