

Taskforce on Federal Consumer Financial Law

Chapter 9: Innovation

Responsible Innovation advances competition and inclusion in financial services. New products and services, or new ways to create or deliver existing ones, offer consumers lower prices, improved quality, and greater choice. Innovation is central to improving markets for consumers who have access to financial products and services as well as expanding markets to reach consumers who have been left out.

Today, innovation in financial services is almost synonymous with technology-enabled financial services, or FinTech. Firms use expanded access to consumer data and new technology—particularly mobile technology—to offer a variety of new products and services. Over the past decade, markets throughout the world have seen rapid growth in the use of FinTech services such as mobile payments, peer-to-peer lending, digital savings, artificial intelligence-based financial management, and use of alternative data, and exploration into underwriting methods models powered by artificial intelligence and machine learning. Consumers can now make payments faster, obtain credit with greater ease, build expanded credit and payment histories, and save in more ways than ever before. A technology-fueled future appears bright.

But the benefits of any one innovation have their limits. ATMs have not been particularly helpful to consumers without bank accounts from which to draw cash, just as online banking does not do much for such consumers today. The potential benefits of mobile payments and other mobile “apps” are similarly lost on consumers without mobile devices or who do not feel comfortable with certain technology. And advanced credit scoring models cannot change the fact that some consumers lack the means to repay a loan, no matter how accurately it is priced. Significantly, bias can still persist in even the most advanced technological systems.

Innovation can also raise new risks for consumers. Nearly costless means of communication can lower prices but also raise the specter of repeated or otherwise unwanted contact from service providers. Data sharing and mobile services also invite fraudsters eager to access bank-account and payment information. Continually changing crediting scoring models could, intentionally or unintentionally, discriminate against individuals on the basis of non-credit factors, such as race, location information, or potentially even medical history.

Congress recognized innovation’s importance by authorizing the Consumer Financial Protection Bureau (“Bureau”) to exercise its authorities for the purpose of, among other things, “ensuring that . . . markets for consumer financial products and services operate transparently and efficiently to facilitate access and innovation.”¹ The challenge for the Bureau and other policymakers is to foster innovation and allow consumers to reap its benefits, while also guarding against potentially harmful effects.

This chapter first examines some of the ways in which innovation has benefitted and presented risks to consumers, drawing on examples from the last several decades. Second, it explores how federal law can affect innovation, again using specific historical case studies. Third, it identifies non-rulemaking options that agencies have used to promote innovation, such as offices of innovation and regulatory sandboxes. Fourth, it reviews some of the recent technological developments that undergird FinTech innovation, as well as particular products

¹ DFA section 1021(b)(5) (12 U.S.C. § 5511(b)(5)).

Commented [VF(1): To TF Staff: Here are general comments that apply throughout this chapter:

- Review and revise ineffective/offensive tone
- Provide fact-based support rather than opinion/personal commentary
- Add citations when making otherwise unsubstantiated assertions
- Consider striking text or footnotes that rely on sources that are from “interested” parties, or which are not peer-reviewed academics articles, from government publications, etc.

Here are more specific comments for this chapter:

- Development of automated underwriting systems is not mentioned as a significant innovation in the credit markets
- Reg Tech and Sup Tech are not mentioned when speaking of potential areas of innovation
- Summary of the Bureau’s October 2020 Tech Sprint is very brief, based on public information, and could be supplemented by other information we can share.

Commented [WN(2R1): I’m not seeing tonal concerns in this piece. Bullet one appears to be a broad copy-paste critique more than a specific concern in chapter 9.

- Not sure the review understands the scope, charter, or purpose of the TF with the second comment, but a cite review will be conducted.
- Bullet 3 is a reiteration of bullet 2.
- Bullet 4 seems to contradict requests in bullets 2 and 3.
- Bullet 5 is a suggestion that the author may choose to accept, but somewhat odd given all the content that cou...

Commented [VF(3): Is this referring to alt-data? If so, recommend specificity by using the terms “alternative data” and “AI/ML in underwriting” and not conflating into the phrase, “alternative methods”

Commented [VF(4): Inconsistent with the careful wording of the Interagency Statement on Alt Data.

Recommended revision:
“This technology has the potential to expand access to credit and facilitate a more user-friendly experience for consumer financial products.”

Commented [WN(5R4): Defer to author on acceptance of edit. Suggest rejecting edit based on the fact that the report is independent and does not need to align to Bureau policies or interagency statements. Moreover, the sentence as written seems to be ‘more true’ in a broad sense (these technologies exist and are having the impacts as originally drafted).

Commented [VF(6): Bias needs to be mentioned separate and apart from the discrimination concern below.

This can be footnoted with: the Amazon hiring algorithm [[HYPERLINK "https://www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G"](https://www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G)], Google’s facial recognition algorithm [[HYPERLINK "https://www.wsj.com/articles/BL-DGB-42522"](https://www.wsj.com/articles/BL-DGB-42522)], and an ...

Commented [WN(7R6): Nice comment and citation, but is it germane to the point of the paragraph?

and services that make use of these technologies. Finally, it discusses potential regulatory frameworks that policymakers may wish to consider as they grapple with the benefits and risks of innovation.

I. Benefits and Risks of Innovation: Historical Examples

Earlier chapters discussed in detail key innovations in consumer financial services over the past century, but it worth briefly revisiting a few to highlight how changes in practices or technology have affected consumers. We first review two products, automated teller machines and credit cards, that increased greatly consumers' ability to access funds and make payments, followed by a discussion of the beneficial innovations in automobile lending. We then use advances in communication technology and changes in mortgage servicing practices to highlight some of the risks to consumers that innovation can entail.

A. ATMs

Automated teller machines, or ATMs, are an example of a technological innovation with obvious benefits for consumers. Prior to their invention, consumers wishing to draw funds from deposit accounts had to make a trip to a local bank branch and obtain the assistance of a live employee. Bank branches' locations and "bankers' hours" thus limited where and when a consumer could access stored funds. Consumers with a check in hand had more options, as department stores such as Sears would cash checks as a way to draw in potential retail customers, but they too were limited by those stores' locations and hours.²

Recognizing the potential to attract customers without lengthening hours or hiring more staff, banks began offering ATMs in the late 1960s and early 1970s. Initially, ATMs were slow to catch on in the U.S., but they numbered roughly 10,000 by the late 1970s as consumers began to value the benefits of obtaining cash, making deposits, and transferring funds at times convenient to them.³ Their growth exploded after court decisions in the 1980s holding that ATMs are not bank branches and therefore not subject to geographic restrictions on bank concentration, removing a significant regulatory hurdle for expanding ATM networks across state lines.⁴ And in the 1990s, ATMs unaffiliated with specific banks were increasingly common in stores and shops all across the country. Today, there are over 470,000 ATMs in the U.S., permitting consumers to engage in banking transactions without stepping foot in their bank—or in any bank at all.⁵

² Linda Rodriguez McRobbie, *The ATM is Dead. Long Live the ATM!*, Smithsonian Magazine, Jan. 15, 2015, [[HYPERLINK "https://www.smithsonianmag.com/history/atm-dead-long-live-atm-180953838/?all"](https://www.smithsonianmag.com/history/atm-dead-long-live-atm-180953838/?all)].

³ Stan Sienkiewicz, *The Evolution of EFT Networks from ATMs to New On-Line Debit Payment Products*, Fed. Reserve Bank of Phila. Payment Cards Ctr. Discussion Paper No. 02-04, at 4 (Apr. 2002), [[HYPERLINK "https://www.philadelphiafed.org/-/media/consumer-finance-institute/payment-cards-center/publications/discussion-papers/2002/eftnetworks_042002.pdf?la=en"](https://www.philadelphiafed.org/-/media/consumer-finance-institute/payment-cards-center/publications/discussion-papers/2002/eftnetworks_042002.pdf?la=en)].

⁴ *Indep. Bankers Ass' of N.Y. State v. Marine Midland Bank*, 583 F. Supp. 1042 (W.D.N.Y. 1984), rev'd in part, vacated in part, and remanded, 757 F.2d 453 (2d Cir. 1985), cert. denied, 476 U.S. 1186 (1986).

⁵ Lian An, et al., *The Locational Study of ATMs in the U.S. by Ownership: ATM Analysis Based on National Data*, at 4 (2018), [[\l ",-:text=Currently%20there%20are%20approximately%20470%2C135,ATM%20fleets%20are%20as%20follows\l">HYPERLINK "http://www.akleg.gov/basis/get_documents.asp?session=31&docid=22687"\l ",-:text=Currently%20there%20are%20approximately%20470%2C135,ATM%20fleets%20are%20as%20follows\l"](http://www.akleg.gov/basis/get_documents.asp?session=31&docid=22687)].

Commented [VF(8): Automated Underwriting Systems are missing form this list and yet AUS are a significant innovation in the credit markets.

Commented [WN(9R8): Consider including, but unsure the emphasis as not all examples of financial innovation are covered. Is this one more significant than other examples that are also not included?

Commented [FP(10): Suggested for more neutral tone.

Commented [WN(11R10): Is a more neutral tone a proper summation? I seem to recall that the discussion on auto lending was focused on beneficial innovations.

ATMs nonetheless have had their share of consumer protection issues. Fraud, a complicated issue to navigate for even the savviest of consumers, has been a consistent problem since inception. ATM-use fees have been a particular sore point for consumers. Although banks increasingly reimburse fees that their clients incur when using another bank's or independent ATM, this benefit is reserved primarily for wealthier consumers who satisfy minimum-account-balance or similar requirements. ATM locations may also favor these wealthier consumers, as ATMs may not be located in the neighborhoods low-income or minority consumers live in. The poor are less likely to receive this benefit, meaning that they often must choose between the time, expense, and inconvenience of traveling to an ATM that does not charge a fee or paying a fee to access their own money.⁶

B. Credit Cards

Credit cards became one of the dominant forms of consumer credit during the second half of the 20th century, a development due to several innovations, including changes in technology, industry practice, and regulation. In the early 1900s, oil companies and department stores moved beyond ledger books and introduced proprietary cards that consumers could use to purchase items from the issuing business on credit. Sometimes made of metal and imprinted with the consumer's information through use of a "Charga-Plate," these cards helped to promote customer loyalty and afforded consumers the convenience of using one card to shop at each of a business's branches. However, they were generally limited for use at a single business.⁷

In 1946, John S. Biggins introduced his innovative "Charg-It" plan at Flatbush National Bank in Brooklyn, New York.⁸ Similar to a modern credit card, the Charg-It plan permitted approved consumers to use credit when shopping at a variety of previously cash-only stores, such as grocers, butchers, and hardware sellers. Consumers took advantage of 30-day repayment terms, and stores that could not afford to offer credit could nonetheless accept it as payment, allowing them to compete for customers with larger credit-granting department stores. The Bank, meanwhile, charged consumers 0.5 percent per month (or 6 percent annually) for use of the revolving account and received 8 percent of each sale from the stores. Innovative as the Charg-It plan and similar ventures were, practical considerations narrowed the scope:

⁶ The Covid-19 pandemic provided a particularly stark example of the lengths to which some consumers will go to find a preferred ATM. New York State provides unemployment benefits through direct deposit or on a debit card that Key Bank issues. Key Bank has a higher withdrawal limits than other banks and does not charge an ATM fee, making it a better option than other banks for many unemployed consumers. But it has only one ATM in New York City. Following mass pandemic-related unemployment, consumers lined up outside the ATM at all times of day, sometimes waiting two to three hours in lines of 50 to 60 people. Some consumers, many low-income and people of color, valued the higher withdrawal limits and lack of fees so much that they traveled for hours from neighboring boroughs to reach the ATM in Manhattan. See Matthew Haag, *To Reach a Single A.T.M., a Line of Unemployed Stretches a Block*, N.Y. Times, June 5, 2020 (last updated July 7, 2020) [[HYPERLINK "https://www.nytimes.com/2020/06/05/nyregion/keybank-nyc-coronavirus.html"](http://www.nytimes.com/2020/06/05/nyregion/keybank-nyc-coronavirus.html)].

⁷ Merrill Fabry, *Now You Know: What Was the First Credit Card?*, Time, Oct. 19, 2016, [[HYPERLINK "https://time.com/4512375/first-credit-card/"](https://time.com/4512375/first-credit-card/)]; Jay MacDonald & Taylor Tompkins, *The History of Credit Cards*, CreditCards.com, July 11, 2017, [[HYPERLINK "https://www.creditcards.com/credit-card-news/history-of-credit-cards/"](https://www.creditcards.com/credit-card-news/history-of-credit-cards/)]; John S. Kiernan, *When Were Credit Cards Invented? A Complete History*, WalletHub, June 12, 2015, [[HYPERLINK "https://wallethub.com/edu/cc/history-of-credit-cards/25894"](https://wallethub.com/edu/cc/history-of-credit-cards/25894)].

⁸ Louis Hyman, *Debtors Nation: The History of America in Red Ink* 146-47 (2012)

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Commented [WN(15R14)]: Agreed. Do we have a citation? I found this, but it doesn't appear to be a sufficient citation: [[HYPERLINK "http://www.akleg.gov/basis/get_documents.asp?session=31&docid=22687"](http://www.akleg.gov/basis/get_documents.asp?session=31&docid=22687)].

Each day, stores had to leave sales slips with the Bank to earn reimbursement for that day's sales, limiting the plan's range to a roughly two-square block radius.⁹

Soon thereafter, the Diners Club pioneered the three-party card and the Franklin National Bank of New York launched its bank credit card, laying the groundwork for a rapid expansion of credit cards beginning in the 1960s. As chapter 2 explains, the growth of three-party credit cards was in large part a technological change that replaced less convenient forms of credit that consumers had used to purchase household goods. Credit cards have also replaced cash for many consumers, providing an ever-ready form of payment that does not require the time or costs of trips to an ATM and that facilitates online transactions. They further offer a great number of benefits aside from convenience, such greater privacy and security as compared to checks, better liability protections than cash, and—for wealthier consumers—perks like cash-back, airline miles, or special access to airport lounges or concert tickets.

Credit cards also have had their share of consumer protection concerns that Congress, regulators, and industry members have attempted to address. Fraud is a persistent problem, prompting Congress to provide consumers with dispute rights and limited liability for fraudulent transactions.¹⁰ Meanwhile, issuers and merchants have increasingly turned to chip-enabled cards and requiring consumers to provide a three-digit card verification value as security measures. Congress also required additional disclosures to address a ~~pereceived~~ lack of transparency and inability to compare products.¹¹ The Bureau and others have brought enforcement actions against issuers that deceptively marketed or failed to provide promised add-on products, such as credit insurance or credit monitoring.¹²

C. Auto Financing

Unlike ATMs and credit cards, innovations in automobile financing relied less on technological advances than a change in market practices to meet consumer demand. As chapter 8 details, Ford initially declined to offer credit in connection with its new Model T, offering layaway plans instead. Financing companies quickly stepped in to fill the credit void, followed by Ford's competitor, General Motors, pairing its cars with financing opportunities. Ford then joined the increasingly competitive automobile financing market, giving consumers multiple manufacturers and lenders from which to choose.

As with all innovations, automobile financing has raised consumer protection concerns. For example, automobile dealers' practice of negotiating sales prices raises the specter of intentional or unintentional price discrimination on prohibited bases, ~~including especially~~ when

⁹ *Id.*; Merrill Fabry, *Now You Know: What Was the First Credit Card?*, Time, Oct. 19, 2016, [[HYPERLINK "https://time.com/4512375/first-credit-card/"](https://time.com/4512375/first-credit-card/)].

¹⁰ See, e.g., Fair Credit Billing Act, 15 U.S.C. §§ 1666-1666j.

¹¹ Credit Card Accountability, Responsibility, and Disclosure Act of 2009, Pub. L. No. 111-24, 23 Stat. 1734 (2009).

¹² See, e.g., *In re First Nat'l Bank of Omaha*, No. 2016-CFPB-0014, Consent Order (Aug. 25, 2016), [[HYPERLINK "https://www.consumerfinance.gov/about-us/newsroom/cfpb-orders-first-national-bank-omaha-pay-3225-million-illegal-credit-card-practices/"](https://www.consumerfinance.gov/about-us/newsroom/cfpb-orders-first-national-bank-omaha-pay-3225-million-illegal-credit-card-practices/)]; *Consumer Fin. Protect. Bureau v. Affinion Grp. Holdings*, No. 3:14-cv-01005-VAB, Stipulated Final Judgment and Order (D. Conn. Oct. 27, 2015), [[HYPERLINK "https://www.consumerfinance.gov/about-us/newsroom/cfpb-takes-action-against-companies-for-unfair-billing-of-credit-card-add-on-products-and-services/"](https://www.consumerfinance.gov/about-us/newsroom/cfpb-takes-action-against-companies-for-unfair-billing-of-credit-card-add-on-products-and-services/)].

Commented [VF(16): There is a lot more that can be said about the impacts on women, people of color, and others that are extremely detrimental, continuing the same concern that no matter the innovation, bias can and has calcified existing inequity, showing that the rising tide of innovation does not lift all boats.

Commented [WN(17R16): This sounds like commentary to bring up at a later time as it doesn't fit clearly in this paragraph. My take is that the text does not suggest that all innovation is good, the purpose of the chapter cautions against potential risks of innovation while making the case that it can be beneficial. Likewise the text does not suggest that innovation lifts all boats but rather it can be beneficial for populations in need of the innovation.

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Commented [WN(19R18): I like this edit. Defer to author.

Commented [RR(20R18): I agree this term has a well-established alternative meaning and should be avoided in this context.

financing is part of the deal. Chapter 10 explores these issues in greater detail, but it is worth noting that some dealers have carved a niche through a simple innovation—no-haggle pricing—that avoids discrimination some issues that can result in discrimination. In the 1990s, Saturn's straightforward pricing practices attracted consumers who wished not to negotiate. In particular, Saturn developed a reputation as a preferred dealer for women, who reported disrespectful or otherwise poor treatment at other automobile dealers.¹³ Carmax adopted a similar policy in the used car markets, and some other dealers have since followed suit.

D. Autodialers and Email

Other innovations have had significant drawbacks for consumers that continue to draw significant attention from regulators and market participants. Technological advances such as autodialers and email, for example, have greatly reduced the cost of communication but have led to consumers receiving too many unwanted contacts. Autodialers enable firms to use a program that automatically dials consumers' telephone numbers from a large database of stored numbers and connects the firm's employees to calls that consumers answer. While the savings from replacing live employees with autodialers theoretically benefits consumers through lower prices, it also has led to an onslaught of unsolicited marketing and debt collection calls to consumers. These calls are both bothersome and costly: The Federal Communications Commission ("FCC") has found that they impose substantial costs on consumers.¹⁴ Similarly, the almost-zero marginal cost of sending automated emails has enabled firms to repeatedly message consumers who may or may not have ever purchased any product or service from the firm. Email, of course, has substantial benefits for consumers, in both personal and financial contexts, but the presence of spam messages has been a consistent nuisance.

Congress and regulators have attempted to curb unwanted contacts through legislation and rulemakings that, among other things, limit the frequency of automated or other telephone calls and give consumers the option to opt-out of unwanted calls, texts, or emails.¹⁵ These efforts have been modestly successful, and it may be the market that ultimately provides the best check on abusive behavior. Email providers have long employed tools that divert likely spam or junk messages, and improved techniques serve as a marketing point for their services. Likewise, telephone providers, in particular those offering mobile services, increasingly tout features that can identify likely marketing or scam calls and allow consumers to block specific callers. Consumers also now have the option of downloading third-party apps for their smartphones that are increasingly effective at detecting spam calls, texts, and emails, as well as blocking some legitimate calls—such as from debt collectors—that consumers may prefer to avoid.

¹³ See George P. Blumberg, *To Sell a Car That Women Love, It Helps if Women Sell It*, N.Y. Times, Oct. 26, 2005, [[HYPERLINK "https://www.nytimes.com/2005/10/26/automobiles/autospecial/to-sell-a-car-that-women-love-it-helps-if-women.html"](https://www.nytimes.com/2005/10/26/automobiles/autospecial/to-sell-a-car-that-women-love-it-helps-if-women.html)]; Jim Henry, *How Saturn went from Unique to Just Another One of the Crowd*, Automotive News, Sept. 14, 2008, [[HYPERLINK "https://www.autonews.com/article/20080914/ANA09/809150338/how-saturn-went-from-unique-to-just-another-one-of-the-crowd"](https://www.autonews.com/article/20080914/ANA09/809150338/how-saturn-went-from-unique-to-just-another-one-of-the-crowd)]; Thomas J. Cosse & Terry M. Weisenberger, *Saturn Buyers: Are They Different?*, 5:4 J. Marketing Theory & Prac. 77 (Fall 1997).

¹⁴ Fed. Commc'n. Comm'n, *In re Rules & Regulations Implementing the Tel. Consumer Prot. Act of 1991*, 30 FCC Rcd. 7961, 8020 ¶ 118 (2015) ("In addition to the invasion of consumer privacy for all wireless consumers, the record confirms that some are charged for incoming calls and messages. These costs can be substantial when they result from the large numbers of voice calls and texts autodialers can generate.").

¹⁵ CAN-SPAM Act of 2003, 15 U.S.C. § 7701 *et seq.*; Telephone Consumer Protection Act of 1991, 47 U.S.C. § 227; Telemarketing and Consumer Fraud and Abuse Prevention Act, 15 U.S.C. § 6101 *et seq.*; 47 C.F.R. § 64.1200 *et seq.*; 47 C.F.R. § 64.1600 *et seq.*

Commented [VF(21): Citation for this assertion?]

Commented [WN(22R21): Citation needed when 'theoretically' is used?]

Commented [FP(23): This topic seems incongruous but if it is retained, consider discussing the innovation of consumers being able to record calls from debt collectors that may be illegal and abusive.]

Commented [WN(24R23): I like this suggestion. Last line could read:]

"Even in the case of legal contacts from debt collectors, consumers can use call recording technologies to ensure individual collectors are not deceptive or abusive during calls."

E. Mortgage Servicing

Decoupling ownership from servicing of mortgage loans has had profound consequences for consumers. While there is no need to repeat the extensive literature on this subject,¹⁶ it is worth acknowledging that specialized mortgage servicers represent a market innovation. The innovation, however, moves consumers from a highly competitive market—mortgage origination—to one with little to no competition directed to consumers. Servicers compete for the creditor's business and, with incentives often not aligned with consumers' interests (nor in some cases with those of the creditor), it seems inevitable that servicers would fail to provide the assistance necessary to deal with the widespread delinquencies that triggered the 2008 financial crisis. Consequently, Congress, federal and state actors, and private litigants have had to step in to correct the market failure. Regulatory changes, as well as increased investor emphasis on rehabilitating delinquent loans, have helped improve servicing standards, and a cadre of servicers that specialize in delinquent loans may prove to benefit some consumers.

Commented [FP(25): Citations?]

II. Regulatory Challenges: Historical Examples

A consistent theme from the last 50 years of consumer financial protection law is that policymakers have had difficulty predicting the future. Rapid changes in technology can change markets in ways that policymakers could not anticipate and sometimes more quickly than they are able to respond. Some laws intended to address a harmful market practice or perceived market failure have, within a short time, even created barriers to competition or innovative products and services. This section uses two federal laws, the Electronic Signatures in Global and National Commerce Act (“E-Sign Act”) and the Fair Debt Collection Practices Act (“FDCPA”), to examine how such barriers arise and how regulators struggle to overcome them.

A. The E-Sign Act

The E-Sign Act provides a lesson in how laws designed to foster innovation can quickly become barriers to it. The explosion in internet-based commerce during the 1990s heralded a new, virtual marketplace, in which consumers could increasingly purchase anything or manage their finances without physically visiting external locations. The novelty of online transactions raised concerns about how the parties to the transaction could authenticate each other's identity and trust in the transaction's validity and security, however. States addressed these concerns in patchwork fashion. By 1999, more than 40 states had electronic authentication laws, but no two were identical. “This inconsistency,” a Congressional Report observed, “deter[red] businesses and consumers from using electronic signature technologies to authorize contracts or transactions.”¹⁷ Congress therefore enacted the E-Sign Act in 2000, establishing national rules governing the use of electronic signatures for transactions in interstate or foreign commerce.¹⁸

Commented [FP(26): Citation? Suggested tweak to narrow the assertion so it does not make a universal claim. Also suggest using the word “may” which is what is used in the highlighted language on the next page.]

Commented [RR(27R26): This seems reasonable to me – but note that the next sentence explains how the statement will be justified in this section.]

Commented [FP(28): Suggested tweaks to narrow the assertion so it does not make a universal claim. Suggest using “may,” to mirror the statement made below that E-Sign requirements “may not benefit substantially consumers.”]

Commented [RR(29R28): Seems reasonable to me]

Of interest here, the legislation also included detailed rules about providing consumer disclosures. When a federal or state statute, regulation, or other law requires an institution to

¹⁶ Bureau of Consumer Fin. Protect., *Mortgage Servicing Rules Under the Real Estate Settlement Act (Regulation X)*, 78 Fed. Reg. 10695, 10699–10702 (Feb. 14, 2013).

¹⁷ S. Rep. No. 106-131, at 1-2 (1999).

¹⁸ Pub. L. No. 106-229 (June 30, 2000), codified at 15 U.S.C. § 7001 et seq.

provide a notice or other information “in writing,” the E-Sign Act permits to the institution to send it electronically, subject to obtaining the consumer’s consent and making several additional disclosures about the scope and withdrawal of consent.¹⁹ The E-Sign Act further requires that institutions disclose the hardware and software requirements to access and retain electronic records and that the consumer consent be given “in a manner that reasonably demonstrates that the consumer can access information in the electronic form that will be used to provide information that is the subject of the consent.”²⁰

From the perspective of the 106th Congress, these requirements may have appeared flexible and accommodating to changes in technology—that is, to innovation. Congress did not mandate any particular software or hardware requirements for electronic notices, a wise decision given the dramatic changes in computing capabilities over the ensuing two decades. Congress also prohibited agencies with rulemaking authority from adding to the E-Sign Act’s requirements or re-imposing a paper-only requirement,²¹ thus ensuring that additional regulations could not further deter the use of electronic notices. And disclosures about the scope and withdrawal of consent may have seemed like fairly obvious safeguards.

The E-Sign Act has nonetheless created hurdles to providing electronic notices that **may not benefit substantially consumers.** The Bureau estimates that the required disclosures may be more than 1,000 words long,²² which could take an average person 2 to 8 minutes to read or institution’s employee 6 to 10 minutes to recite aloud.²³ Or, more likely, they simply add to the barrage of disclosures that consumers click-through without reading as they attempt to complete a transaction.²⁴ Requiring that the consumer’s consent “reasonably demonstrates” that the consumer can access the electronic notice imposes an additional procedural step and can create compliance questions about whether there has been such a demonstration.²⁵ The

¹⁹ The E-Sign Act imposes three general prerequisites to sending a notice electronically: (1) “the consumer has affirmatively consented to such use and has not withdrawn such consent”; (2) prior to consenting, the consumer receives clear and conspicuous statements that (a) consumer has right to paper copy of disclosure, after consent (and before if there is such an option), (b) consumer has right to withdraw consent, and the procedures for doing so (and for updating the consumer’s contact information), (c) the conditions or consequences of withdrawing consent, and (d) any fees for withdrawing consent or for the paper copy, and (e) the scope of the consent; and (3) the consumer (a) “prior to consenting, is provided with a statement of the hardware and software requirements for access to and retention of the electronic records,” and (b) “consents electronically, or confirms his or her consent electronically, in a manner that reasonably demonstrates that the consumer can access information in the electronic form that will be used to provide the information that is the subject of the consent.” E-Sign Act section 101(c)(1)(A)-(C); 15 U.S.C. § 7001(c)(1)(A)-(C). In addition, the E-Sign Act requires providing additional disclosures and re-obtaining the consumer’s consent if, after the consumer originally consented, “a change in the hardware or software requirements needed to access or retain electronic records creates a material risk that the consumer will not be able to access or retain a subsequent electronic record that was the subject of the consent.” E-Sign Act section 101(c)(1)(D); 15 U.S.C. § 7001(c)(1)(D).

²⁰ *Id.*

²¹ E-Sign Act section 104(b)(2)(B), (c)(1); 15 U.S.C. § 7004(b)(2)(B), (c)(1).

²² Bureau of Consumer Fin. Protect., *Debt Collection Practices (Regulation F) NPRM*, 84 Fed. Reg. 23274, 23361 (May 21, 2019).

²³ See, e.g., Number of Words, *How Long Does It Take to Read 1000 Words?*, [[HYPERLINK "https://numberofwords.com/faq/how-long-read-1000-words/"](https://numberofwords.com/faq/how-long-read-1000-words/)]; Convert Words to Time, [[HYPERLINK "https://wordstotime.com/"](https://wordstotime.com/)].

²⁴ See Chapter 7 (Information and Disclosure).

²⁵ Compliance questions could include, for example, whether a “reasonabl[e] demonstrat[ion]” includes consumers’ affirmations that they can access a particular type software or obtaining a consumer’s consent on an HTML web page even though the disclosure will be in PDF. See, e.g., Thomas P. Quinn, Jr., *Time to Rethink ESIGN*

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Commented [FP(35): Does the content of Chapter 7 support the “more likely” assertion made here? If so, we suggest including a short quote in the footnote.]

Commented [WN(36R35): Good comment but given how the topic is covered in chapter 7 I would suggest not citing our own work. Perhaps we could say something along the lines of “as stated in chapter 7”]

Commented [VF(37): Consider striking text or footnotes that rely on sources that are from “interested” parties, or which are not peer-reviewed academic articles, from government publications, etc.]

Commented [WN(38R37): Defer to author. I would only ask why interested parties are not bad sources when we consider feedback from RFI comments so seriously. Looking at Quinn’s qualifications, he seems to be a serious thinker and actor in the field.]

substance of the reasonable-demonstration requirement also may be antiquated, better suited to a time when software programs had widely different capabilities and there was a genuine question whether a given consumer could open a particular type of electronic file. Today, formats such as PDF are widely available, free to download, and compatible with most operating systems, reducing concerns that consumers will consent to receiving notices that they cannot open.

The E-Sign Act's inconsistent application also produces anomalous results. It applies only when the statute or regulation requires a disclosure to be made "in writing";²⁶ it does not apply when the law does not specify a delivery method or when the law allows alternatives, such as "in writing or electronically."²⁷ So institutions can provide many notices electronically without complying with the E-Sign Act's procedures. The E-Sign Act's applicability can vary even within a single regulation. For example, under Truth-in-Lending's Regulation Z, an institution must comply with the E-Sign Act when providing electronic periodic statements for open-end loans, but not for closed-end loans.²⁸ It is difficult to see how consumers benefit from these diverging regimes.

Federal agencies have limited authority to create exemptions from the E-Sign Act, as it imposes a fairly stringent two-part test for doing so.²⁹ An agency must find that the exemption (1) "is necessary to eliminate a substantial burden on electronic commerce," and (2) "will not increase the material risk of harm to consumers." Only the Federal Reserve Board appears to have made such findings. In 2007, it amended five regulations to exempt disclosures provided in situations where consumers access an application or advertisement for credit or other financial service online; the exemptions did not apply to other notices, such as account-opening disclosures, periodic statements, or change-in-terms notices.³⁰ Notably, the Bureau's recent debt collection rulemaking included a proposed E-Sign Act exemption for delivery of the debt-validation notice, but the Bureau chose not to finalize that provision after determining that it lacked sufficient information to properly assess the risk and benefits under the E-Sign Act's criteria.³¹

²⁶ "Consent Handshake" Standards? (May 2014), [\[HYPERLINK "https://www.counselorlibrary.com/insights/article.cfm?articleID=810"\]](https://www.counselorlibrary.com/insights/article.cfm?articleID=810).

²⁷ E-Sign Act section 101(c)(1); 15 U.S.C. § 7001(c)(1).

²⁸ Bureau of Consumer Fin. Protect., *Mortgage Servicing Rules Under the Truth in Lending Act (Regulation Z)*, 78 Fed. Reg. 10901, 10963 & n.118 (Feb. 14, 2013) ("The Bureau notes that TILA section 128(f) does not require a 'writing'; thus, the Bureau does not believe this provision triggers the E-Sign Act. . . . Additionally, the Bureau notes that TILA section 128(f)(2) requires the Bureau to take into account that statements may be transmitted electronically. This further suggests the periodic statement disclosure is not a 'writing' which would trigger the E-Sign Act requirements.").

²⁹ Compare 12 C.F.R. § 1026.5(a)(1)(iii) (open-end loans) with 12 C.F.R. § 1026.41(c) (closed-end loans).

³⁰ E-Sign Act section 7004(d)(1); 15 U.S.C. § 7004(d)(1) ("A Federal regulatory agency may, with respect to matter within its jurisdiction, by regulation or order issued after notice and an opportunity for public comment, exempt without condition a specified category or type of record from the requirements relating to consent in section 101(c) if such exemption is necessary to eliminate a substantial burden on electronic commerce and will not increase the material risk of harm to consumers.").

³¹ Bd. of Governors of the Fed. Reserve Sys., 72 Fed. Reg. 63445 (Regulation B) 63452 (Regulation E) 63456 (Regulation M), 63462 (Regulation Z), and 63477 (Regulation DD) (Nov. 9, 2007).

³² Bureau of Consumer Fin. Protect., *Debt Collection Practices (Regulation F)*, __ Fed. Reg. __, Docket No. CFPB-2019-002, Oct. 30, 2020, at 432-42.

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The above concerns—lengthy disclosures, outdated processes, inconsistent application across regulations, and limits on agencies' exemption authority—suggest that the E-Sign Act ~~has~~ may have become a barrier to the type of innovation that Congress intended it to foster. Therefore, as discussed in Volume II of this Report, it may be time for Congress to revise significantly the E-Sign Act, such as by eliminating certain requirements, replacing it with a more flexible approach, or granting agencies greater exemption authority.

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B. FDCPA

As a second example, the FDCPA presents a somewhat mixed bag from an innovation perspective. Unlike with the E-Sign Act, Congress had no stated goal of facilitating the use of new technology through the FDCPA; rather, Congress sought to end abusive collection practices.³² The FDCPA thus consists largely of prohibitions, as well as a handful of disclosure requirements to prevent deception or apprise consumers of their rights.

The FDCPA's principle-based rules remain as relevant today as they were when Congress acted it in 1977. Broad prohibitions on harassment or abuse, false or misleading representations, and unfair practices have been interpreted and applied to changes in market practices without the need to re-write the statute, similar to the Federal Trade Commission's ("FTC's") experience with its authority for preventing unfair and deceptive acts and practices under the FTC Act. Likewise, the general prohibition on revealing debts to third parties can be applied to all collection practices, whether they are conducted in-person, over the telephone, or through email. The same is true of many of the specific prohibitions, such as those against communicating with consumers who are represented by counsel or falsely representing the amount of the debt or that the collector is affiliated with the government.

On the other hand, many of the specific provisions about communicating with consumers—such as those governing the use of telephone calls, telegrams, and postal mail—have created uncertainty for consumers and debt collectors when applied to newer means of communications. Most notably, the FDCPA requires a debt collector communicating with a debtor to identify ~~the caller themselves~~ as a debt collector or inform the debtor that the debt collector is attempting to collect a debt.³³ But a debt collector who discloses such information in a voicemail risks violating the FDCPA's separate prohibition against revealing debts to third parties if a third party overhears the message.³⁴ This conundrum has vexed courts, with some holding that debt collectors violated the FDCPA by omitting the required disclosure, while others have held that voicemails are not "communications" (and so not subject to the disclosure requirement) if they contain certain content,³⁵ and still others holding that no voicemail is

³² FDCPA section 802; 15 USC 1692a(e) ("It is the purpose of this subchapter to eliminate abusive debt collection practices by debt collectors, to insure that those debt collectors who refrain from using abusive debt collection practices are not competitively disadvantaged, and to promote consistent State action to protect consumers against debt collection abuses.").

³³ FDCPA section 807(11); 15 U.S.C. § 1692e(11).

³⁴ FDCPA section 805(b); 15 U.S.C. § 1692c(b). See, e.g., *Cordes v. Frederick J. Hanna & Assocs., P.C.*, 789 F. Supp. 2d 1173, 1177 (D. Minn. 2011); *Fed. Trade Comm'n v. Check Enforcement*, No. CIV.A. 03-2115 (JWB), 2005 WL 1677480, at *8 (D.N.J. July 18, 2005); *aff'd sub nom. Fed. Trade Comm'n v. Check Investors, Inc.*, 502 F.3d 159 (3d Cir. 2007).

³⁵ See, e.g., *Zortman v. J.C. Christensen & Assocs., Inc.*, 870 F. Supp. 2d 694, 707-08 (D. Minn. 2012); *Biggs v. Credit Collections, Inc.*, No. CIV-07-0053-F, 2007 WL 4034997, at *4 (W.D. Okla. Nov. 15, 2007).

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completely immune from liability and that risk-averse collectors could simply choose not to leave them.³⁶

The upshot is that many collectors did exactly that: They eschewed voicemails in favor of making repeated telephone calls to reach the debtor, contributing to the numerous consumer complaints about too-frequent telephone calls.³⁷ That is, due to inflexible statutory provisions, many collectors have avoided innovating through the use of a low-cost technology that could have benefitted consumers by enabling them to listen to a message and place a return call at a time and place of the consumer's choosing. This is certainly not the outcome that policymakers would have desired if they could have anticipated changes in technology and industry practice. While the Bureau has recently finalized a rule that would enable collectors to leave voicemails limited to specific content,³⁸ it remains to be seen whether this will be effective. In any event, it arrives as use of voicemail is giving way to email and text messages as preferred means of communication.

Other FDCPA provisions show the difficulty of trying to apply-by-analogy rules governing older technologies. For example, the Bureau has confronted the question whether and how a collector can use email to communicate with consumers. In its initial outline of proposals under consideration, the Bureau analogized an email to an envelope containing a letter, such that the outside of an email (the "from" and "subject" fields) would be subject to the same similar limitations on language as the outside of an envelope.³⁹ By the proposed rule stage, however, the Bureau appeared to analogize an email to the letter itself—that is, the password to access the email account functioned like the protections afforded to a consumer's postal mailbox, and an email sent to the correct address could contain all the same information as a letter addressed to the right consumer.⁴⁰ Thus we see the challenges that regulators face when attempting to stay true to outdated statutory language while also predicting what interpretation may achieve the best ends for consumers and market participants.

Given the various ways that courts and regulators have or could have answered these questions, debt collectors' reluctance to adopt newer means of communications is understandable, albeit unfortunate, as each has the potential to reduce both costs and consumer

³⁶ See, e.g., *Foti v. NCO Fin. Sys., Inc.*, 424 F. Supp. 2d 643, 655–50 (S.D.N.Y. 2006).

³⁷ Bureau of Consumer Fin. Protect., *Debt Collection Practices (Regulation F)*, 84 Fed. Reg. 23274, 23290 (May 21, 2019).

³⁸ Bureau of Consumer Fin. Protect., *Debt Collection Practices (Regulation F)*, ___ Fed. Reg. ___, Docket No. CFPB-2019-002, Oct. 30, 2020, at 565 (12 C.F.R. § 1006.2(j)).

³⁹ Bureau of Consumer Fin. Prot., *Small Business Review Panel for Debt Collector and Debt Buyer Rulemaking: Outline of Proposals Under Consideration and Alternatives Considered*, at appendix H at 2 (July 2016), [[HYPERLINK "https://files.consumerfinance.gov/f/documents/20160727_cfpb_Outline_of_proposals.pdf"](https://files.consumerfinance.gov/f/documents/20160727_cfpb_Outline_of_proposals.pdf)] ("[FDCPA] section 808(8) provides that, when a debt collector communicates with a consumer by mail or by telegram, the debt collector may not use any language or symbol on the envelope other than the collector's address. The debt collector also may include his business name on the envelope, but only if the name does not indicate that he is in the debt collection business. The proposals under consideration would adapt these standards to newer technologies such as email by specifying that a debt collector cannot send an email message to a consumer if the message's 'from' or 'subject' lines contain information that would reveal that the email is about a debt.").

⁴⁰ Bureau of Consumer Fin. Protect., *Debt Collection Practices (Regulation F)*, 84 Fed. Reg. 23274, 23400-01 (proposed 12 C.F.R. § 1006.6(d)), 23406 (proposed 12 C.F.R. § 1006.42(b)) (May 21, 2019). Reflecting this change in approach, under one provision of the proposed rule, a collector could obtain a safe harbor by, among other things, disclosing the purpose of the communication in an email's "subject" field, an act that the outline of proposals under consideration would have prohibited. *Id.* at 23406 (proposed 12 C.F.R. § 1006.42(b)).

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harm. The Bureau has now offered its answers, and its efforts to harmonize the statutory language with appropriate policy outcomes has been laudable, but in some cases the statute's highly specific requirements regarding communications and certain technologies have limited what the Bureau can achieve. In any event, the time it takes to develop these answers through rulemaking is time lost for testing and revising innovations using new communication media.

III. Regulatory Challenges and Non-Rulemaking Tools

As these examples suggest, technology-enabled financial innovation presents a number of unique challenges for regulators. Financial regulators also need to consider how financial innovation interacts with regulatory objectives such as financial inclusion, financial stability, financial integrity, and consumer protection. First, regulators are usually not technology experts. Second, many FinTech companies are not traditional financial services providers and so regulatory jurisdiction may not even be clear. Third, regulators are often risk-averse, preferring products and services with known costs and benefits to those that present uncertainty for consumers and markets. Fourth, regulators have limited resources, and devoting time, staff, and finances to understanding new technologies can be significant. And fifth, incumbent institutions may pressure regulators to maintain the status quo by erecting express or de facto barriers to entry, such extending the existing regulatory regime to cover new products and services (raising rivals' entry costs or preventing entry altogether).⁴¹

In response, regulators have developed a number of strategies to foster the benefits of innovation while guarding against risks. One is to organize themselves internally to ensure an innovation focus, such as by creating a dedicated office of innovation or a FinTech accelerator. Another is to employ new tools aimed at cooperation and mutual learning between market participants and regulators. Such tools include regulatory sandboxes, no-action letters, tech sprints, and formal and informal guidance. We explore these strategies primarily through the lens of the Bureau.

A. Office of Innovation

Numerous regulators in the U.S. and around the world have established offices of innovation.⁴² Although they vary in precise form and function, an office of innovation generally engages with, and provides regulatory clarity to, companies that wish to offer innovative products and services. This engagement can informal, such as office hours during which agency staff answer questions or make presentations.⁴³ Or it can be more formal, through participation in a regulatory sandbox or similar initiative (discussed next). Apart from the universal focus on innovation, these offices may differ in their specific objectives or criteria for engaging with a

⁴¹ United Nations Secretary-General's Special Advocate for Inclusive Finance for Development and Cambridge Centre for Alternative Finance, *Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech*, at 15 (2019), [[HYPERLINK](#) "https://www.unsgsa.org/files/3515/5007/5518/UNSGSA_Report_2019_Final-compressed.pdf"] [hereinafter "UNGSA, Early Lessons"].

⁴² UNGSA, *Early Lessons* at 19 & figure 5 (identifying 33 countries that have at least one regulatory office of innovation).

⁴³ See, e.g., Office of the Comptroller of the Currency, *OCC to Host Innovation Office Hours in Washington, D.C.* (Aug. 12, 2019), [[HYPERLINK](#) "<https://www.occ.treas.gov/news-issuances/news-releases/2019/nr-occ-2019-89.html>"]; LabCFTC, Announcing LabCFTC Office Hours, [[HYPERLINK](#) "https://www.cftc.gov/sites/default/files/2018-09/labcftc_officehours102318.pdf"];

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Commented [FP(68): I think the issue is not that regulators "prefer" certain products and services, but that they must acquire a certain level of familiarity with the products and services to provide thoughtful and effective guidance. In fact, the preceding discussion highlights the risks of a regulator engaging in rulemaking without fully understanding the nature, extent and trajectory of emerging innovation. Suggest rewording as follows:

"Third, regulators must contend with the challenge of regulating emerging innovations at a point when the true nature, extent and trajectory of the consumer protection risks and benefits are unclear."

Commented [WN(69R68): Good point and nice suggestion, and though it seems to lead to a small substantive change, the author should consider. My question is whether the comment inherently suggests a preference, which is the point of the sentence?

market participant. An office may limit its initiatives to products or providers that have the potential to promote financial inclusion, will serve the domestic market, or have ensured against risks to consumers.⁴⁴

An office of innovation can benefit firms and regulators and consumers in various ways. FinTech companies, particularly those in the U.S., face high costs of regulatory uncertainty. An office within a regulator dedicated to providing guidance or developing trial programs can help lower these costs. By engaging with market participants, regulators can also hope to build a better understanding of new technologies and products, as well as develop evidence for future regulatory reform policy positions. Given that offices of innovation are still a relatively new phenomenon, however, their overall impact, including on financial inclusion, is an ongoing question and still difficult to discern completely.⁴⁵

The Bureau established its Office of Innovation in 2018, folding into it the work of a predecessor endeavor.⁴⁶ The office administers the Bureau's innovation policies, including the regulatory sandboxes, trial disclosure program, and no-action letter program, and in conjunction with other offices within the Bureau, it helped organize as the Bureau's tech sprints. It estimates that it engages with over 100 firms per month regarding innovation issues, through office hours (both scheduled and ad hoc) and other outreach.

B. Regulatory Sandboxes

Regulatory sandboxes have been "widely adopted" throughout the world as a way to promote innovation.⁴⁷ "[S]andboxes are, at their core, formal regulatory programs that allow market participants to test new financial services or business models with live customers, subject to certain safeguards and oversight."⁴⁸ A United Nations report observed that there are two distinct, overlapping models: (1) product testing sandboxes, which permit an institution to offer a new product that has not been registered or licensed; and (2) policy testing sandboxes, which enable a regulator to test a regulatory hypothesis on new technologies or business models.⁴⁹ Multi-jurisdictional sandboxes are a sort of third model; they may involve more than one regulatory entity and may adopt elements of either product or policy testing sandboxes.⁵⁰

Sandboxes can promote consumer-protective innovation in several ways. By testing and closely observing new products, regulators can identify potential sources of consumer harm associated with innovation, suggest tweaks to the product or service, and obtain immediate feedback on whether the changes ameliorate potential harm or affect the product's benefits. By

⁴⁴ UNGSA, *Early Lessons* at 21, figure 6.

⁴⁵ *Id.* at 21.

⁴⁶ Press Release, *Bureau of Consumer Financial Protection Announces Director for the Office of Innovation* (July 18, 2018), [\[HYPERLINK "https://www.consumerfinance.gov/about-us/newsroom/bureau-consumer-financial-protection-announces-director-office-innovation/"\]](https://www.consumerfinance.gov/about-us/newsroom/bureau-consumer-financial-protection-announces-director-office-innovation/).

⁴⁷ UNGSA, *Early Lessons* at 7.

⁴⁸ *Id.* at 26.

⁴⁹ *Id.* at 27.

⁵⁰ *Id.*

Commented [VF(70): TF: Note that the lead on the Sprints is not OI but T&I, and OI & OFLEO were co-leads on the October 2020 sprint. OI is not leading the next Sprint. Suggest adding a bit more on Tech Sprint from October, by consulting with T&I and OFLEO.

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testing regulatory policy hypotheses, regulators may be able to learn whether a regulatory approach achieves particular policy goals, before applying it to an entire industry.

Sandboxes can further promote innovation and financial inclusion by helping to identify areas of existing regulations that inadvertently inhibit the development of new products or services.⁵¹ For example, the Bank Negara Malaysia amended its “know your customer” regulations after a sandbox trial involving a remittance provider, WorldRemit. The regulations had required in-person checks, which created significant barriers to opening accounts online, particularly in rural areas. The sandbox trial allowed WorldRemit to operate its electronic know your customer tool under the Bank’s supervision. The Bank and WorldRemit’s customers were sufficiently satisfied by the electronic tool that the Bank amended its regulations.⁵²

As of late 2020, the Bureau has two sandbox programs dedicated to innovation—a Compliance Assistance Sandbox, and a Trial Disclosure Sandbox.⁵³ To borrow the U.N. report’s classifications, both appear to be primarily product testing sandboxes. The Bureau also participates in two multi-jurisdictional sandboxes.

1. Compliance Assistance Sandbox

The Bureau established its Compliance Assistance Sandbox, or CAS, in 2019. It enables approved entities to test a new product or service for a limited period of time while under the Bureau’s supervision.⁵⁴ Bureau approvals are “intended to facilitate compliance in the face of regulatory uncertainty.”⁵⁵ An approved entity receives a safe harbor from liability under certain laws—which can include the Truth in Lending Act (“TILA”) (Regulation Z), the Equal Credit Opportunity Act (“ECOA”) (Regulation B), and the Electronic Fund Transfer Act (“EFTA”) (Regulation E)⁵⁶—thus precluding federal or state regulators from assessing liability for the product or service. Approvals are expected to last up to two years, unless renewed.⁵⁷

During the approved period, the entity must report certain information to the Bureau so that the Bureau can monitor for any “material increase” in the risk of consumer injury. Such information includes “complaint patterns, default rates, or similar metrics.”⁵⁸ If the reported

⁵¹ UNGSA, *Early Lessons* at 30.

⁵² UNGSA, *Early Lessons* at 30; BNM (Bank Negara Malaysia), *Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) – Money Services Business (Sector 3)* (Supplementary Document No. 1), [[HYPERLINK "http://www.bn.m.gov.my/index.php?ch=57&pg=146&ac=650&bb=file"](http://www.bn.m.gov.my/index.php?ch=57&pg=146&ac=650&bb=file)].

⁵³ See Bureau of Consumer Fin. Protect., *Policy on the Compliance Assistance Sandbox*, 84 Fed. Reg. 48246 (Sept. 13, 2019); Bureau of Consumer Fin. Protect., *Policy To Encourage Trial Disclosure Programs*, 84 Fed. Reg. 48260 (Sept. 13, 2019); Bureau of Consumer Fin. Protect., *Innovation at the Bureau*, [[HYPERLINK "https://www.consumerfinance.gov/policy-compliance/innovation/"](https://www.consumerfinance.gov/policy-compliance/innovation/)]. Prior to establishing the sandboxes, the Bureau promoted innovation through a program called Project Catalyst, which, among other things, included a trial disclosure program. [[HYPERLINK "https://www.consumerfinance.gov/about-us/blog/project-catalyst-collaboration-improve-understanding-financial-well-being/"](https://www.consumerfinance.gov/about-us/blog/project-catalyst-collaboration-improve-understanding-financial-well-being/)].

⁵⁴ Bureau of Consumer Fin. Protect., *Policy on the Compliance Assistance Sandbox*, 84 Fed. Reg. 48246 (Sept. 13, 2019) [hereinafter “CFPB CAS Policy”].

⁵⁵ CAS Policy, 84 Fed. Reg. at 42848.

⁵⁶ The Bureau relies on 15 U.S.C. § 1640(f) (TILA); 15 U.S.C. § 1691e(e) (ECOA); and 15 U.S.C. § 1693m(d) (EFTA) as the authority for these safe harbors. *See CFPB CAS Policy*, 84 Fed. Reg. at 48256 n.66.

⁵⁷ CFPB CAS Policy, 84 Fed. Reg. at 48247, § E.1.

⁵⁸ CFPB CAS Policy, § D.5.

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information, or a change in applicable law (such as a statutory amendment or Supreme Court decision), suggests that the entity is not complying with the law or the terms of the Bureau's approval, the Bureau can terminate the approval or require the entity to change its program.⁵⁹

The CAS policy also allows for the approvals of templates so that multiple entities can test identical products or services under the Bureau's supervision.⁶⁰ Under this option, a service provider, trade association, consumer advocacy group, or other third party who is not a covered person can apply for a template approval regarding a product or service. Subsequently, individual covered persons offering the same or substantially similar product or service can apply for the approval pursuant to the terms of the template. This option enables multiple covered persons to participate in a sandbox trial for the same product or service.

In determining whether to approve an applicant, the Bureau considers the potential consumer benefits and risks associated with the product or service, as well as whether the applicant has identified metrics for evaluating the realization of those benefits and strategies to mitigate the risks.⁶¹ The Bureau also requires applicants to identify the specific statutory or regulatory ambiguity giving rise to the entity's application, an explanation why CAS approval is the appropriate way to resolve the ambiguity, and how the product or service complies with applicable law.⁶² To that extent, the Bureau has stated that CAS approvals are meant to address regulatory uncertainty, not to relieve entities from regulatory obligations.⁶³

As of late 2020, the Bureau has approved one CAS template application, submitted by a service provider that intends to work with employers who wish to enroll employees in emergency savings plans.⁶⁴ The program would direct a percentage of employees' salaries into emergency savings products that the employees could access; employees could change the contribution amount or account-holding institution, or opt out of the program entirely, at any time. If employees do not designate an account for their savings, the employer would create an account for the employee at a designated institution and direct the employee's earnings under the program to that account. The Bureau found that a CAS approval template was appropriate because of potential ambiguity under EFTA and Regulation E regarding autosave programs—in particular, Regulation E requires that employers give employees a choice how to receive their salary, but in cases where an employee does not make a choice, a question can arise about whether the employee employer has set a reasonable default enrollment method.⁶⁵ The A CAS approval under this template would thus provide any approved employer with a safe harbor under those provisions of EFTA and Regulation E.

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⁵⁹ CFPB CAS Policy, § E.3.

⁶⁰ CFPB CAS Policy, § F.

⁶¹ CFPB CAS Policy, §§ B.3-.4, C. The Bureau expects to grant or deny applications generally within 60 days of receiving them. *Id.* at § C.

⁶² CFPB CAS Policy, §§ B.5, C.

⁶³ CFPB CAS Policy, 84 Fed. Reg. at 42848 ("Approvals are intended to facilitate compliance in the face of regulatory uncertainty. The relief they provide is from regulatory uncertainty, not from regulatory obligation.").

⁶⁴ See Bureau of Consumer Fin. Protect., *Granted Applications*, [[HYPERLINK "https://www.consumerfinance.gov/policy-compliance/innovation/granted-applications/"](https://www.consumerfinance.gov/policy-compliance/innovation/granted-applications/)] (Build Commonwealth, Inc., Cast Template).

⁶⁵ *Id.* (discussing 15 U.S.C. § 1693k(2), 12 C.F.R. § 1005.10(e)(2), and Comment 10(e)(2)-1).

Some commentators, in particular A consumers advocacy groups, have criticized the CAS policy (and other Bureau innovation efforts) as exceeding the Bureau's authority, lacking public input, and employing insufficient procedural safeguards.⁶⁶ They It contend that CAS approvals may amount to granting exemptions from—rather than merely addressing ambiguity in—legal requirements, which necessitates notice-and-comment rulemaking. They further object to the lack of public scrutiny: CAS applications are not public until the Bureau issues its decision, thereby precluding stakeholders from voicing concerns, and the CAS policy appears to contemplate that much of the data that the Bureau collects will remain confidential. The application process also elicits objections, with some claiming that the 60-day decision time and vague application and approval criteria will amount to the Bureau “rubber-stamping” applications. In short, critics fear that the Bureau will let industry members skirt the law without any accountability to the public or affected consumers, all in the name of innovation. The Task Force notes these criticisms, but believes that the potential benefits of CAS identified in this section, combined with the fact that the Bureau considers the risks associated with specific CAS applications, outweigh risks identified by the advocacy groups.

2. Trial Disclosure Sandbox

Through section 1032(e) of the Dodd-Frank Act, Congress granted the Bureau express authority to provide certain legal protections to covered persons to conduct trial disclosure programs.⁶⁷ In particular, the Bureau may permit covered persons to conduct trial disclosure programs, limited in time and scope, for the purpose of providing trial disclosures designed to improve upon model forms within the Bureau’s jurisdiction. The Bureau has had a trial disclosure policy in place since 2013, which it revised substantially in 2019, though it has yet to approve an application under either policy.⁶⁸ The revised policy employs largely the same application criteria and process as the CAS policy, discussed above.

In its revised policy, the Bureau states that trial disclosures could be used where an entity wishes to test either an alternative to existing model form or a new form in the absence of an existing model.⁶⁹ Thus, the Bureau can use information from a trial program either to improve upon existing forms or to inform the creation of new model or sample forms. And during a trial program, the Bureau can work with the participating entity to make iterative improvements to the disclosure, thereby testing the effects of each change in a closely monitored environment.

3. Multi-Jurisdictional Sandboxes

⁶⁶ See, e.g., Ams. For Fin. Reform Educ. Fund, et al., *Comments on Policy on No-Action Letters and the CFPB Product Sandbox*, Docket No. CFPB-2018-0042 (Feb. 11, 2019), [[HYPERLINK "https://www.nclc.org/images/pdf/rulemaking/nclc-comments-nal-product-sandbox.pdf"](https://www.nclc.org/images/pdf/rulemaking/nclc-comments-nal-product-sandbox.pdf)]; Nat'l Consumer Law Ctr., *CFPB to Approve Potentially Risky Fintech Products* (Sept. 10, 2019), [[HYPERLINK "https://www.nclc.org/media-center/cfpb-to-approve-potentially-risky-fintech-products.html"](https://www.nclc.org/media-center/cfpb-to-approve-potentially-risky-fintech-products.html)].

⁶⁷ 12 U.S.C. § 5532(e).

⁶⁸ Bureau of Consumer Fin. Protect., *Policy To Encourage Trial Disclosure Programs; Information Collection*, 78 Fed. Reg. 64389 (Oct. 29, 2013); Bureau of Consumer Fin. Protect., *Policy To Encourage Trial Disclosure Programs*, 84 Fed. Reg. 48260 (Sept. 13, 2019) [hereinafter “CFPB 2019 Trial Disclosure Policy”].

⁶⁹ CFPB 2019 Trial Disclosure Policy, 84 Fed. Reg. at 48261 n.4.

Multi-jurisdictional sandboxes enable regulators to collaborate across borders and share experiences, including in ways that promote innovation in new technologies and practices.⁷⁰ They can also offer economies of scale to multiple regulators operating the sandbox together, though initial start-up costs and coordination may be challenging.⁷¹ For financial entities, they offer the opportunity to test products or strategies in multiple states or countries at once.⁷²

The Bureau participates in two multi-jurisdictional sandboxes. The first, the American Consumer Financial Innovation Network, or ACFIN, is open to state attorneys general, state financial regulators, and federal financial regulators within the U.S.⁷³ Launched in September 2019, it grew within a year to at least 19 members, including the Bureau, the Office of the Comptroller of the Currency (“OCC”), 10 state attorneys general, and 7 state regulators.⁷⁴ ACFIN’s stated purpose is “to facilitate innovation that benefits consumers through greater competition, consumer access, or financial inclusion in markets for consumer financial products and services.”⁷⁵ It attempts to achieve this goal through members participating in joint office hours, no-action letter programs, or sandbox programs. To that end, the Bureau and OCC have held joint office hours in which participants engaged in one-on-one meetings to discuss FinTech, new products or services, or other issues related to innovation.⁷⁶ With respect to no-action letter and sandbox programs, ACFIN encourages members to adopt similar application and approval processes, coordinate review of applications, and establish procedures for mutual recognition of no-action letters and sandbox trials.⁷⁷

The Bureau also participates in the Global Financial Innovation Network, or GFIN, one of the two international sandboxes.⁷⁸ A group of financial regulators and related organizations established GFIN in January 2019. It currently has more than 60 members, with the U.K.’s Financial Conduct Authority serving as chair.⁷⁹ GFIN’s purpose is to enable regulators to collaborate and share experience regarding innovation, to provide firms with accessible

⁷⁰ See Fin. Conduct Auth., *Global Financial Innovation Network (GFIN)*, [[HYPERLINK](#) "<https://www.fca.org.uk/firms/innovation/global-financial-innovation-network>"].

⁷¹ UNGSA, *Early Lessons* at 28.

⁷² See Fin. Conduct Auth., *Global Financial Innovation Network (GFIN)*, [[HYPERLINK](#) "<https://www.fca.org.uk/firms/innovation/global-financial-innovation-network>"].

⁷³ Am. Consumer Fin. Innovation Network, *Charter as of October 15, 2019*, [[HYPERLINK](#) "https://files.consumerfinance.gov/f/documents/201910_cfpb_ACFIN-charter.pdf"].

⁷⁴ Bureau of Consumer Fin. Protect., *American Consumer Financial Innovation Network*, [[HYPERLINK](#) "<https://www.consumerfinance.gov/policy-compliance/innovation/americanc-consumer-financial-innovation-network>"].

⁷⁵ Am. Consumer Fin. Innovation Network, *Charter as of October 15, 2019*, [[HYPERLINK](#) "https://files.consumerfinance.gov/f/documents/201910_cfpb_ACFIN-charter.pdf"].

⁷⁶ Bureau of Consumer Fin. Protect., *CFPB, OCC Host Virtual Innovation Office Hours* (July 2, 2020), [[HYPERLINK](#) "<https://www.consumerfinance.gov/about-us/newsroom/cfpb-oce-host-virtual-innovation-office-hours/>"].

⁷⁷ Am. Consumer Fin. Innovation Network, *Charter as of October 15, 2019*, [[HYPERLINK](#) "https://files.consumerfinance.gov/f/documents/201910_cfpb_ACFIN-charter.pdf"].

⁷⁸ UNGSA, *Early Lessons* at 28. The other is API Exchange (APIX), launched by the ASEAN Financial Innovation Network in 2019. “APIX is a cross-border, open-architecture platform to improve financial inclusion. APIX enables financial institutions and FinTech firms to connect through a cross-border marketplace, conduct collaborative experiments in a sandbox among financial industry participants, and facilitate adoption of APIs to drive digital transformation and financial inclusion across the Asia Pacific region.” *Id.*

⁷⁹ Global Fin. Innovation Network, [[HYPERLINK](#) "<https://www.thegfin.com>"].

regulatory contacts, and to enable firms to conduct cross-border trials of products or services.⁸⁰ Given its infancy, GFIN has not yet approved any cross-border trials. It has initiated cross-border testing pilot, in response to which it received over 40 applications and identified 8 candidates for potential participation in the pilot.⁸¹

C. No-Action Letters

A no-action letter is generally understood to be an agency's notification that it does not intend to recommend an enforcement or supervisory action against an entity based on the entity's description of a proposed transaction, product, or service.⁸² Although its legal status can vary or be subject to considerable debate, a traditional no-action letter is not a legal conclusion that binds the agency.⁸³ Rather, it is agency staff's statement about the likelihood of enforcement or supervisory action, and it is limited to the facts as the entity presents them.⁸⁴

No-action letters have a considerable history in U.S. financial regulation. As early as 1936, the Securities & Exchange Commission ("SEC") issued "opinions of counsel," the precursor to modern no-action letters. These consisted of staff opinions on the applicability of laws to particular transactions or the likelihood of enforcement, expressly stated that they were not Commission rulings, and generally remained non-public.⁸⁵ By the early 1960s, no-action letters largely replaced opinions of counsel, and today they are issued and made public pursuant to established SEC policies.⁸⁶ By some estimates, the SEC has issued over 2,500 no-action

⁸⁰ Fin. Conduct Auth., *Global Financial Innovation Network (GFIN)*, [[HYPERLINK "https://www.fca.org.uk/firms/innovation/global-financial-innovation-network"](https://www.fca.org.uk/firms/innovation/global-financial-innovation-network)].

⁸¹ Global Fin. Innovation Network, *Cross-border Testing*, [[HYPERLINK "https://www.thegfin.com/crossborder-testing"](https://www.thegfin.com/crossborder-testing)].

⁸² Bureau of Consumer Fin. Protect., *Policy on No-Action Letters; Information Collection*, 81 Fed. Reg. 8686, 8692 (Feb. 22, 2016) [hereinafter "CFPB 2016 NAL Policy"]; ("[A]n agency may provide some form of notification that it does not intend to recommend initiation of an enforcement or supervisory action against an entity based on the application of specific identified provisions of statutes or regulations to its offering of a particular product."); Sec. & Exch. Comm'n, *Procedures Utilized by the Division of Corporation Finance for Rendering Informal Advice*, Securities Act Release No. 6253, 21 S.E.C. Docket 320 n.2 (Oct. 28, 1980) ("A no-action letter is one in which an authorized staff official indicates that the staff will not recommend any enforcement action to the Commission if the proposed transaction described in the incoming correspondence is consummated."); 17 C.F.R. § 140.99(a)(2) (similar definition in CFTC regulations).

⁸³ See, e.g., Donna M. Nagy, *Judicial Reliance on Regulatory Interpretations in SEC No-Action Letters: Current Problems and a Proposed Framework*, 83 Cornell L. Rev. 921, 937-38 (1998).

⁸⁴ See, e.g., 17 C.F.R. § 140.99(a)(2) ("No-action letter means a written statement issued by the staff of a Division of the Commission or of the Office of the General Counsel that it will not recommend enforcement action to the Commission for failure to comply with a specific provision of the Act or of a Commission rule, regulation or order if a proposed transaction is completed or a proposed activity is conducted by the Beneficiary. A no-action letter represents the position only of the Division that issued it, or the Office of the General Counsel if issued thereby. A no-action letter binds only the issuing Division or the Office of the General Counsel, as applicable, and not the Commission or other Commission staff. Only the Beneficiary may rely upon the no-action letter.").

⁸⁵ See Nagy, 83 Cornell L. Rev. at 936-37 (citing Thomas P. Lemke, *The SEC No-Action Letter Process*, 42 Bus. Law. 1019, 1019, 1021 (1987); Louis Loss & Joel Seligman, *Securities Regulation* 533-34 n.29 (3d ed. 1989)).

⁸⁶ See Sec. & Exch. Comm'n, *Procedure Applicable to Requests for No Action or Interpretive Letters*, Securities Act Release No. 5127, 36 Fed. Reg. 2600 (Jan. 25, 1971); Sec. & Exch. Comm'n, *Procedures Applicable to Requests for No-Action and Interpretive Letters*, Securities Act Release No. 33-6523, 45 Fed. Reg. 72644 (Oct. 28, 1980); Sec. & Exch. Comm'n, *Procedures Applicable to Requests for No-Action and Interpretive Letters*, Securities Act Release No. 6269 (Dec. 23, 1980), [[HYPERLINK "https://www.sec.gov/rules/other/33-6269.pdf"](https://www.sec.gov/rules/other/33-6269.pdf)]; 17 C.F.R. 200.81 (describing procedures applicable to publication of interpretive, no-action, and certain exemption letters).

letters in the last 50 years.⁸⁷ The Commodity Futures Trading Commission (“CFTC”) has likewise made extensive use of no-action letters, issuing at least an estimated 1500 since 1975.⁸⁸ Similar to the SEC’s practice, CFTC no-action letters are styled as staff statements about whether it will recommend enforcement with respect to a proposed transaction or activity.⁸⁹

No-action letters have significant benefits and drawbacks for agencies, industry, and consumers. For industry members, they provide reasonable assurance that a transaction or practice will not lead to an enforcement action, reducing the firm’s risk of liability and therefore encouraging it to offer new products or services. Although a no-action letter may apply only to the particular entity that requested it, other firms who wish to offer the same or similar product may factor it into their risk analysis. The informal nature of a no-action letter also allows a regulator to issue them much more quickly than a notice-and-comment rulemaking. As a result, consumers may benefit from the introduction of new products or services that otherwise might be delayed pending regulatory clarity.

The informal nature of no-action letters also leads to some of their primary criticisms. While styled as staff statements, industry and sometimes courts can treat no-action letters as authoritative statements of law. Commentators have described SEC no-action letters as “a source of de facto law”⁹⁰ and “the sole body of precedent” on some aspects of securities law.⁹¹ Issued without the opportunity for public input, however, agencies risk acting without full consideration of all potential arguments or facts beyond those that the requesting entity chooses to disclose. Consumer advocacy groups have expressed concern that certain no-action letters could amount to de facto legislative rules done without notice and comment, as they may change how consumer protection laws apply.⁹² And while an agency could in theory simply withdraw a no-action letter at any time and take a different view of the law, it may be reluctant to do so given fair notice concerns and the reliance that parties have placed on the prior letter.

No-action letters also can be a considerable drain on agency resources. Reviewing, researching, and determining whether and how to respond to a request for a no-action letter can require a significant investment of time for agency staff—time that otherwise could be used to investigate or supervise potential law violators, engage in formal rulemaking that applies to an entire market, or provide less resource-intensive oral guidance. To that end, the SEC simplified greatly its no-action letter process in 1980, switching from a model in which staff drafted a summary of the pertinent facts and agency views, to an “endorsement method” in which it publishes the industry member’s request and adds a short statement at the end expressing staff’s

⁸⁷ Bureau of Consumer Fin. Protect., *Policy on No-Action Letters*, 84 Fed. Reg. 48229, 48244 n.56 (Sept. 13, 2019) [hereinafter “CFPB 2019 NAL Policy”].

⁸⁸ CFPB 2019 NAL Policy, 84 Fed. Reg. at 48244 n.56 (summarizing review no-action letters listed on CFTC website).

⁸⁹ 17 C.F.R. § 140.99(a)(2).

⁹⁰ Nagy, 83 Cornell L. Rev. at 925.

⁹¹ Nagy, 83 Cornell L. Rev. at 924 (quoting Thomas P. Lemke, *The SEC No-Action Letter Process*, 42 Bus. Law. 1019, 1019 (1987)). The SEC itself recognizes that the public sometimes view no-action letters as “the most comprehensive secondary source on the application of [the federal securities] laws.” *Id.* (quoting Sec. & Exch. Comm’n, *Expedited Publication of Interpretative, No-Action and Certain Exemption Letters*, Securities Act Release No. 6764, [1987-1988 Transfer Binder] Fed. Sec. L. Rep. (CCH) P84,228, at 89,053, 89,054 (Apr. 7, 1988) [Fed. Sec. L. Rep. (CCH) ¶ 84,228, at 89,053, 89,054 (Apr. 7, 1988)].

⁹² CFPB 2019 NAL Policy, 84 Fed. Reg. at 48231 (summarizing comments to the Bureau’s proposed no-action letter policy).

view.⁹³ In addition, neither the SEC nor the CFTC has a set time period in which staff will respond to requests for no-action letters, and neither will address hypothetical scenarios.⁹⁴

The Bureau established a no-action letter policy in 2016 and revised it substantially in 2019.⁹⁵ Both policies stated that their primary purpose was to promote innovation by reducing regulatory uncertainty as to the use of new technologies or products.⁹⁶ The revised no-action letter policy generally has the same application criteria and procedures as the compliance-assistance and trial-disclosure sandboxes, discussed above, including for a third party to request a template no-action letter and the expected 60-day decision window for the Bureau.⁹⁷

A Bureau no-action letter differs from a sandbox trial in three key respects. First, a no-action letter does not offer a safe harbor from liability or preclude state or other federal regulators from asserting law violations. Instead, the letter is a statement that “the Bureau will not make supervisory findings or bring a supervisory or enforcement action against the recipient” predicated on the facts described in the application.⁹⁸ Second, unlike the expected two-year terms for sandbox trials, no-action letters have an indefinite term (subject to the Bureau terminating them) are not limited to a two-year term.⁹⁹ And third, no-action letters do not require the recipient to share data with the Bureau on an ongoing basis.

As of late 2020 the Bureau has issued five six no-action letters.¹⁰⁰ The first, issued under the Bureau’s original 2016 policy, concerned a company that uses alternative data and machine learning in making credit underwriting and pricing decisions. The company reported that using a machine learning man underwriting model that incorporated alternative data resulted in substantially more approved applications, and substantially lower APRs, than its traditional model.¹⁰¹ Three other no-action letters concerned applications for template approvals, including one from a service provider that offers loss-mitigation software to mortgage servicers, another from a trade association on behalf of depository institutions that may offer a standardized small-dollar credit product, and one from HUD on behalf of housing counselors.

Although the Bureau’s no-action letter policy is still in its relative infancy, thus far it appears to be consistent with the Bureau’s goal of providing opportunities for innovation. The

⁹³ Sec. & Exch. Comm’n, *Procedures Applicable to Requests for No-Action and Interpretive Letters*, Securities Act Release No. 33-6523, 45 Fed. Reg. 72644 (Oct. 28, 1980).

⁹⁴ Sec. & Exch. Comm’n, *Procedures Applicable to Requests for No-Action and Interpretive Letters*, Securities Act Release No. 33-6523, 45 Fed. Reg. 72644 (Oct. 28, 1980); 17 C.F.R. § 140.99(b)(5)(ii).

⁹⁵ See generally CFPB 2016 NAL Policy, 81 Fed. Reg. 8686; CFPB 2019 NAL Policy, 84 Fed. Reg. 48229. While the original policy anticipated that the Bureau would issue no-action letters sparingly (one to three per year), be unlikely to address the DFA’s UDAAP provisions, and likely require the recipient to share data with the Bureau, the current policy is more flexible and has no such limitations or data-sharing requirements

⁹⁶ CFPB 2016 NAL Policy, 81 Fed. Reg. at 8688; CFPB 2019 NAL Policy, 84 Fed. Reg. at 48229.

⁹⁷ CFPB 2019 NAL Policy, §§ B, C, and E.

⁹⁸ CFPB 2019 NAL Policy, § C.3.

⁹⁹ CFPB 2019 NAL Policy, § D.

¹⁰⁰ Bureau of Consumer Fin. Protect., *Granted Applications*, [HYPERLINK "https://www.consumerfinance.gov/policy-compliance/innovation/granted-applications/"] (listing approvals for Upstart Network, Inc.; U.S. Department of Housing and Urban Development (HUD) (on behalf of HUD-approved housing counselors); Bank of America, N.A.; Brace Software, Inc.; and Bank Policy Institute).

¹⁰¹ Bureau of Consumer Fin. Protect., *An Update on Credit Access and the Bureau’s First No-Action Letter* (Aug. 6, 2019), [HYPERLINK "https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/"].

Commented [FP(84): Please confirm this with OI but I believe the new CFPB policy treats NALs as official agency action, not an issuance by staff. If my recollection is correct, that point is worth noting.

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Bureau appears to be judicious in granting approvals, resisting the potential urge to use them as an alternative to more formal guidance or rulemaking. Some aspects of the Bureau's policy remain worth monitoring, however. For example, the expectation that the Bureau will approve or deny an application within 60 days (whereas the SEC and CFTC policy have no explicit timing parameters) may create the perception that the Bureau is acting without fully considering the potential effects of an approval (although the Bureau encourages potential applicants to contact the Bureau before submitting an application so that the parties can discuss potential pitfalls, and it appears that applicants have followed this suggestion). In addition, because the Bureau's Office of Innovation—rather than its rulewriting, supervisory, or enforcement offices—issues the no-action letters, the Bureau will need to carefully coordinate internally so that any approvals represent a consensus staff view. And, as discussed more below, the Bureau will need to consider carefully which issues are appropriate for a no-action letter and which would benefit from public input.

D. Advisory Opinions

Advisory opinions generally articulate an agency's interpretation of a statute or regulation. They range in formality and legal effect across agencies—some are essentially no-action letters that provide non-binding staff opinions regarding a particular person's conduct in a specific scenario, while others are formal interpretive rules that bind the agency and all covered persons.¹⁰² In all forms, advisory opinions may promote innovation by giving institutions assurance regarding whether novel practices comply with the law.

The Bureau recently announced an advisory opinion pilot program, which includes as among its ~~stated~~ goals ensuring that consumer financial services markets operate transparently and efficiently to facilitate access and innovation.¹⁰³ The advisory opinions will be interpretive rules under the Administrative Procedures Act; as such, they bind the agency and apply equally to any similarly situated person. ~~Like the Bureau's processes for sandbox approvals and no-action letters, the advisory opinion process contemplates an institution or third party submitting a request for an opinion and that the Bureau is more likely to issue one when the requestor identifies regulatory uncertainty.~~¹⁰⁴ To that end, fact-intensive issues, such as determinations regarding unfair, deceptive, or abusive acts or practices ("UDAAPs") or discrimination, are likely not ripe for an advisory opinion. Also similar to the Bureau's other innovation policies, critics of the advisory program cite a lack of public input and scrutiny, including in particular the lack of an opportunity to comment on prospective interpretive rules.

E. Tech Sprints

A financial "tech sprint" brings together participants from regulators, financial institutions, service providers, technology experts, and others to develop technology-based ideas

¹⁰² See, e.g., U.S. Fed. Deposit. Ins. Corp., *FDIC Law, Regulations, Related Acts*, [[HYPERLINK "https://www.fdic.gov/regulations/laws/rules/4000-50.html"](https://www.fdic.gov/regulations/laws/rules/4000-50.html)] (last updated Apr. 20, 2014); U.S. Dep't of Labor, *Filing Requests for ERISA Advisory Opinions: ERISA Procedure 76-1*, [[HYPERLINK "https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/advisory-opinions/filing-requests-for-erisa-aos"](https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/advisory-opinions/filing-requests-for-erisa-aos)]; U.S. Fed. Elec. Comm'n, *The Advisory Opinion Process*, [[HYPERLINK "https://www.fec.gov/legal-resources/advisory-opinions-process/"](https://www.fec.gov/legal-resources/advisory-opinions-process/)].

¹⁰³ Bureau of Consumer Fin. Protect., *Advisory Opinions Pilot*, 85 Fed. Reg. 37321, 37332-33 (June 22, 2020).

¹⁰⁴ *Id.* at 37321.

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I think the speculative nature of the paragraph is intended. The trends are worth monitoring and it seems that the program is too young to truly evaluate. If that is what is intended, then I think it is communicated (and falls within the spirit of the Taskforce charter and goals).

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Commented [FP(94): I believe this requirement was dropped when the policy was finalized a couple of weeks ago. In any event, the Bureau may issue interpretive rules at any time without being prompted by a third party requestor. Suggest deleting.]

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to address a specific topic or challenge.¹⁰⁵ The U.K.'s Financial Conduct Authority ("FCA") pioneered the use of tech sprints in consumer finance, hosting at least seven since 2016.¹⁰⁶ Adapted from so-called "hackathons" that had become increasingly popular in other areas, FCA tech sprints assign participants from different organizations to work collaboratively in small teams.¹⁰⁷ FCA identifies a specific regulatory compliance or market problem that the teams attempt to solve using modern technology, such as application programming interfaces ("APIs") or machine learning programs. Tech sprints typically last two days (and up to two weeks); on the last day, teams present their solutions to a panel of judges, which selects a winner. Topics have included consumer access, regulatory reporting, and financial services and mental health.¹⁰⁸

FCA has identified a number of general and specific ways that tech sprints promote innovation. At a general level, they (1) offer a learning opportunity for regulators, market participants, and others on the use of newer technologies; (2) signal regulatory interest on a topic that may require industry-wide collaboration to address successfully; (3) increase regulatory, academic, and market focus on a technology or issue; (4) foster long-lasting relationships between participants that can cross borders and industries; and (5) generate prototype solutions that can be modified and scaled for use in the market.¹⁰⁹

Among examples of tangible outcomes, private firms are exploring as products to potentially bring to market three of the ideas generated during FCA's first tech sprint.¹¹⁰ In addition, through two tech sprints on regulatory reporting, participants developed a prototype computer program that could automate certain of a financial institution's regulatory reporting obligations. This prototype spurred a pilot program on digital regulatory reporting funded by private firms, the FCA, and the Bank of England.¹¹¹ FCA's tech sprints have also led to literature contributions.¹¹²

¹⁰⁵ Bureau of Consumer Fin. Protect., *Request for Information Regarding Tech Sprints*, 84 Fed. Reg. 49099, 49100 (Sept. 19, 2019); UNGSA, *Early Lessons* at 37; Fin. Conduct Auth., *TechSprints* (last updated Mar. 3, 2020), [[HYPERLINK "https://www.fca.org.uk/firms/innovation/regtech/techsprints"](https://www.fca.org.uk/firms/innovation/regtech/techsprints)].

¹⁰⁶ Fin. Conduct Auth., *Fostering Innovation Through Collaboration: The Evolution of the FCA TechSprint Approach*, at § 2.9 (Mar. 2020), [[HYPERLINK "https://www.fca.org.uk/publication/research/fostering-innovation-through-collaboration-evolution-techsprint-approach.pdf"](https://www.fca.org.uk/publication/research/fostering-innovation-through-collaboration-evolution-techsprint-approach.pdf)] [hereinafter, "FCA TechSprint Report"].

¹⁰⁷ FCA TechSprint Report at § 2.2.

¹⁰⁸ FCA TechSprint Report at § 2.8; Fin. Conduct Auth., *TechSprints* (last updated Mar. 3, 2020), [[HYPERLINK "https://www.fca.org.uk/firms/innovation/regtech/techsprints"](https://www.fca.org.uk/firms/innovation/regtech/techsprints)]. As a more specific example, the consumer access tech sprint "focused on developing practical outcomes using API-accessible data to help overcome consumer access issues to appropriate financial services. Participants had access to the largest anonym[iz]ed customer data test bed in Europe." Fin. Conduct Auth., *Consumer Access TechSprint*, [[HYPERLINK "https://www.fca.org.uk/events/techsprints/consumer-access-techsprint"](https://www.fca.org.uk/events/techsprints/consumer-access-techsprint)].

¹⁰⁹ FCA TechSprint Report at § 2.11.

¹¹⁰ Fin. Conduct Auth., *Consumer Access TechSprint*, [[HYPERLINK "https://www.fca.org.uk/events/techsprints/consumer-access-techsprint"](https://www.fca.org.uk/events/techsprints/consumer-access-techsprint)].

¹¹¹ Fin. Conduct Auth., *Digital Regulatory Reporting* (last updated Sept. 7, 2020), [[HYPERLINK "https://www.fca.org.uk/innovation/regtech/digital-regulatory-reporting"](https://www.fca.org.uk/innovation/regtech/digital-regulatory-reporting)].

¹¹² Andrew Bart, et al., *Model Driven and Machine Executable Regulations Tech Sprint: Success Criteria & Recommendations* (undated), [[HYPERLINK "https://www.innmuta.com/model-driven-and-machine-executable-regulations-tech-sprint/"](https://www.innmuta.com/model-driven-and-machine-executable-regulations-tech-sprint/)].

In the U.S., agencies that are not financial regulators such as the Census Bureau and the Department of Health and Human Services ("HHS") have used tech sprints. Census established The Opportunity Project, which facilitates 12-week tech sprints focused on helping companies, non-profit organizations, and universities build products with federal open data that help solve national challenges.¹¹³ Multiple products that participants developed are now available for public use.¹¹⁴ Following this model, HHS and the Presidential Innovation Fellows organized a 14-week tech sprint that likewise focused on applying digital tools, in this case artificial intelligence, to federal open data.

Citing FCA, the Census Bureau, and HHS as influential precedents,¹¹⁵ the Bureau held its first tech sprint in October 2020.¹¹⁶ Participants worked in teams to develop and test innovative approaches to electronic delivery of adverse action notices required under the Equal Credit Opportunity Act and the Fair Credit Reporting Act.¹¹⁷ The Bureau noted that, following the tech sprint, participants might consider testing their alternative disclosures through the Bureau's Trial Disclosure Sandbox.¹¹⁸ The Bureau has also announced plans to hold future tech sprints.¹¹⁹

F. Other Formal and Informal Guidance

As discussed in chapter 6, agencies provide non-binding guidance in numerous forms, including one-off oral guidance, answers to frequently asked questions, webinars, examination manuals, compliance guides, and policy statements.¹²⁰ Agencies have used these methods to promote innovation, with notable examples including the Bureau's policy statement on data sharing¹²¹ and¹²², an interagency guidance on the use of alternative data and artificial intelligence.¹²², and a blog post on providing adverse action notices when using AI/ML.

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["https://files.consumerfinance.gov/f/documents/cfpb_2019-fair-lending_report.pdf"](https://files.consumerfinance.gov/f/documents/cfpb_2019-fair-lending_report.pdf)) and ([\[HYPERLINK\]](#)
["https://www.consumerfinance.gov/about-us/blog/cfpb-tech-sprint-october-2020-consumer-adverse-action-notices/"](https://www.consumerfinance.gov/about-us/blog/cfpb-tech-sprint-october-2020-consumer-adverse-action-notices/) 1

¹¹³ Opportunity Project, *Our Process*, [[HYPERLINK "https://opportunity.census.gov/our-process/"](https://opportunity.census.gov/our-process/)].

¹¹⁴ Opportunity Project, *Products*, [[HYPERLINK "https://opportunity.census.gov/showcase/"](https://opportunity.census.gov/showcase/)].

¹¹⁵ Bureau of Consumer Fin. Protect., *Request for Information Regarding Tech Sprints*, 84 Fed. Reg. 49099, 49100 (Sept. 19, 2019).

¹¹⁶ Bureau of Consumer Fin. Protect., *CFPB Tech Sprints*, [[HYPERLINK "https://www.consumerfinance.gov/policy-compliance/innovation/cfpb-tech-sprints/"](https://www.consumerfinance.gov/policy-compliance/innovation/cfpb-tech-sprints/)].

¹¹⁷ Bureau of Consumer Fin. Protect., *Electronic Disclosure of Adverse Action Virtual Tech Sprint*, [[HYPERLINK "https://www.consumerfinance.gov/policy-compliance/innovation/cfpb-tech-sprints/electronic-disclosures-tech-sprint/"](https://www.consumerfinance.gov/policy-compliance/innovation/cfpb-tech-sprints/electronic-disclosures-tech-sprint/)].

¹¹⁸ *Id.*

¹¹⁹ Bureau of Consumer Fin. Protect., *CFPB Tech Sprints*, [[HYPERLINK "https://www.consumerfinance.gov/policy-compliance/innovation/cfpb-tech-sprints/"](https://www.consumerfinance.gov/policy-compliance/innovation/cfpb-tech-sprints/)].

¹²⁰ See, e.g., Bureau of Consumer Fin. Protect., *Request for Information Regarding Bureau Guidance and Implementation Support*, 83 Fed. Reg. 13959 (Apr. 2018) (summarizing and requesting comment on the Bureau's various guidance and implementation practices); Bureau of Consumer Fin. Protect., *Submit a Regulatory Inquiry*, [[HYPERLINK "https://reginquiries.consumerfinance.gov/"](https://reginquiries.consumerfinance.gov/)] (providing instructions and a fillable form for submitting a regulatory inquiry to the Bureau).

¹²¹ Bureau of Consumer Fin. Protect., *Consumer Protection Principles: Consumer-Authorized Financial Data Sharing and Aggregation* (Oct. 18, 2017), [[HYPERLINK "https://files.consumerfinance.gov/f/documents/cfpb_consumer-protection-principles_data-aggregation.pdf"](https://files.consumerfinance.gov/f/documents/cfpb_consumer-protection-principles_data-aggregation.pdf)].

¹²² *Interagency Statement on the Use of Alternative Data in Credit Underwriting* (Dec. 2019), [[HYPERLINK "https://files.consumerfinance.gov/f/documents/cfpb_interagency-statement_alternative-data.pdf"](https://files.consumerfinance.gov/f/documents/cfpb_interagency-statement_alternative-data.pdf)].

models¹²³. Although not binding interpretations of law, policy such statements can articulate an agency's preferred objectives and signal to market participants what activities are more or less likely to invite regulatory scrutiny.

IV. Trends in Innovation

A. Advances in Technology

As noted at the outset of this chapter, innovation in financial services today is almost synonymous with technology-enable financial services, or FinTech. In a 2018 report, the Department of the Treasury identified three broad trends that undergird FinTech innovation in financial services: increased digital access; growth in the types and quantity of available consumer data; and development of artificial intelligence, including machine learning.¹²⁴ These developments are intertwined and feed one another. Greater digital access, for example, leads to accumulation of more consumer data in a digital format that is easier to manipulate; artificial intelligence-backed programs can analyze this data more quickly and evolve to become more accurate; and, in turn, these programs can feed into new or improved consumer products and services offered on digital devices. This subsection summarizes some of the broad advances in these key areas, and the next subsection discusses the development of particular products and services.

1. Digital Access

The rise of digital devices, such as personal computers, tablets, smart phones, and other mobile devices, is at the core of FinTech's rapid growth. Approximately 90 percent of U.S. adults have regular internet access. Eighty percent own a smart phone that can operate advanced applications, 74 percent own a laptop or desktop computer, and over 50 percent own a tablet. Most adults communicate using some combination of telephone calls, text messages, and emails to manage their business and personal relationships.¹²⁵

Both traditional financial institutions (such as banks) and upstart FinTech firms have responded to the rise of digital technology by expanding greatly their products and services on digital platforms. Consumers are rapidly adopting these new services. Over 50 percent of consumers with bank accounts engage in online banking, up from 20 percent from a decade ago.¹²⁶ A survey conducted in 2019 found that almost half of U.S. consumers with regular internet access, and almost two-thirds of such consumers world-wide, use at least some FinTech

¹²³ <https://www.consumerfinance.gov/about-us/blog/innovation-spotlight-providing-adverse-action-notices-when-using-ai-ml-models/>.

¹²⁴ U.S. Dep't of the Treasury, *A Financial System That Creates Economic Opportunities: Nonbank Financials, Fintech, and Innovation* (July 2018) [hereinafter "Treasury FinTech Report."].

¹²⁵ Treasury FinTech Report at 17 (internal citations omitted).

¹²⁶ *Id* (citing Ellen A. Merry (Bd. of Governors of the Fed. Reserve Sys.), *Mobile Banking: A Closer Look at Survey Measures* (Mar. 27, 2018), [[HYPERLINK "https://doi.org/10.17016/2380-7172.2163"](https://doi.org/10.17016/2380-7172.2163)]).

services, such as financial planning, savings and investment, online borrowing, or some form of money transfer and payment.¹²⁷

Although digital access has expanded rapidly, it has not reached all consumers. Known as the “digital divide,” there is a significant “gap between populations that have access to modern information and communication technology and those that have no or limited access.”¹²⁸ The FCC estimates 30 percent of consumers living in rural America—roughly 24 million—lack access to broadband (as compared to 2.1 percent of consumers in urban areas).¹²⁹ Digital access rates also vary by race, age, income, and educational background. For example, consumers earning under \$30,000 per year or over age 65 have significantly lower rates of internet use, home-broadband access, and smartphone ownership than do other income and age groups.¹³⁰

2. Data Aggregation

Due to the rise in digital access, huge quantities and varieties of data now exist in digital form. These include both traditional data that furnishers have long furnished to consumer reporting agencies—on-time and delinquent payments, credit limits, and account balances—but also almost limitless other types of information about consumers’ finances or consumers themselves. Such data can include bank account transaction data, utility and rental payments, purchases and use of individual products or services (*e.g.*, a smartphone), and information about the consumer’s location. Online and mobile applications use this data to provide services such as payments and fund transfers, financial advice regarding services or investments, and credit granting. Financial services providers also use this data in complex underwriting decisions and to enhance security.

“Data aggregators” are central to this growth in FinTech services. A data aggregator is a company that accesses a consumer’s account data with the consumer’s permission and uses the data to provide services directly or indirectly to the consumer.¹³¹ The gathered information can come from many different sources and can range from publicly available information to personal account information, such as data about the consumer’s credit-card, brokerage, and bank accounts.¹³² A data aggregator may compile this information and present it in a

Commented [VF(97): Suggest addressing privacy concerns for completeness

¹²⁷ Ernst & Young Global Ltd., *Global FinTech Adoption Index 2019*, at 7 & figure 1 (2019), [[HYPERLINK "https://www.ey.com/en_gl/financial-services/eight-ways-fintech-adoption-remains-on-the-rise"](https://www.ey.com/en_gl/financial-services/eight-ways-fintech-adoption-remains-on-the-rise)].

¹²⁸ Treasury FinTech Report at 21-22.

¹²⁹ *Id.* (citing Fed. Comm’n, *2018 Broadband Deployment Report* (Feb. 2, 2018), [[HYPERLINK "https://apps.fcc.gov/edocs_public/attachmatch/FCC-18-10A1.pdf"](https://apps.fcc.gov/edocs_public/attachmatch/FCC-18-10A1.pdf)]).

¹³⁰ Pew Research Ctr., *Internet/Broadband Fact Sheet* (June 12, 2019), [[HYPERLINK "http://www.pewinternet.org/fact-sheet/internet-broadband/"](http://www.pewinternet.org/fact-sheet/internet-broadband/)]; Pew Research Ctr., *Mobile Fact Sheet* (June 12, 2019), [[HYPERLINK "https://www.pewresearch.org/internet/fact-sheet/mobile/"](https://www.pewresearch.org/internet/fact-sheet/mobile/)].

¹³¹ Bureau of Consumer Fin. Protect., *Consumer Protection Principles: Consumer-Authorized Financial Data Sharing and Aggregation* (Oct. 18, 2017), [[HYPERLINK "https://files.consumerfinance.gov/f/documents/cfpb_consumer-protection-principles_data-aggregation.pdf"](https://files.consumerfinance.gov/f/documents/cfpb_consumer-protection-principles_data-aggregation.pdf)] [hereinafter “CFPB Data Sharing Principles”].

¹³² OCC, *Bank-Provided Account Aggregation Services: Guidance to Banks*, OCC Bulletin 2001-12 (Feb. 28, 2001), [[HYPERLINK "https://www.occ.gov/news-issuances/bulletins/2001/bulletin-2001-12.html"](https://www.occ.gov/news-issuances/bulletins/2001/bulletin-2001-12.html)]; Lael Brainard, *Where Do Consumers Fit in the Fintech Stack?*, (Remarks at “FinTech Risks and Opportunities: An Interdisciplinary Approach”) (Ann Arbor, Michigan, Nov. 16, 2017).

consolidated format to the consumer or, more commonly, transfer it to another company that provides services to the consumer.¹³³

Developers of financial apps often obtain consumers' data from data aggregators in order to provide mobile or other electronic services to a consumer. Data aggregators often act as the intermediary between, on the one hand, the financial institutions that maintain consumers' accounts and thus have account-level data (e.g., banks maintaining checking accounts) and, on the other hand, developers of financial apps that use such account-level data to provide services directly to the consumer. In this role, data aggregators facilitate financial services such as financial advice and management, lending, underwriting and security tools, among others. By providing continually updated data about consumers, data aggregators enable developers of financial apps to offer time-sensitive services, such as creating alerts for potential overdraft charges or more accurate assessments of creditworthiness.

a) *Access to Consumer Data*

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The precise methods by which data aggregators access consumer data can be technically complex and are evolving. In general, however, data aggregators use two methods:
(1) credential-based access, which employs a process known as "screen-scraping," and
(2) application programming interfaces, or "APIs." Each involves a consumer providing a data aggregator with permission to access one or more of the consumer's accounts or account data.¹³⁴

Credential-based access involves consumers providing a data aggregator with their online account credentials, namely their user name and password as well as other forms of identity authentication.¹³⁵ The data aggregator then uses the consumer's security credentials to access the consumer's online account and to copy or "scrape" this data periodically, often daily. More specifically, the Financial Industry Regulatory Authority has defined screen-scraping as the practice of "using an automated process involving a code or a 'robot' that goes out to the third-party websites, registers using [the consumer's] security credentials, and collects applicable account information."¹³⁶

An API is a structured data feed that connects the account holder, such as the consumer's bank, to the data aggregator.¹³⁷ Because an API requires an agreement between the account holder and the data aggregator, parties to an API have the opportunity to agree on terms regarding the scope of data that the account holder will provide to the data aggregator, how often the account holder will provide or update that information, limits on the data

¹³³ OCC, *Bank-Provided Account Aggregation Services: Guidance to Banks*, OCC Bulletin 2001-12 (Feb. 28, 2001), [[HYPERLINK "https://www.occ.gov/news-issuances/bulletins/2001/bulletin-2001-12.html"](https://www.occ.gov/news-issuances/bulletins/2001/bulletin-2001-12.html)]; Lael Brainard, *Where Do Consumers Fit in the Fintech Stack?*, (Remarks at "FinTech Risks and Opportunities: An Interdisciplinary Approach") (Ann Arbor, Michigan, Nov. 16, 2017), [[HYPERLINK "https://www.federalreserve.gov/newsevents/speech/brainard20171116a.htm"](https://www.federalreserve.gov/newsevents/speech/brainard20171116a.htm)] (citing Envestnet Yodlee, "Envestnet Yodlee Unveils Personal Financial Wellness Solution Powered by Data Intelligence," news release, June 12, 2017, [[HYPERLINK "http://www.prnewswire.com/news-releases/envestnet--yodlee-unveils-personal-financial-wellness-solution-powered-by-data-intelligence-300472018.htm"](http://www.prnewswire.com/news-releases/envestnet--yodlee-unveils-personal-financial-wellness-solution-powered-by-data-intelligence-300472018.htm)]).

¹³⁴ CFPB Data Sharing RFI, 81 Fed. Reg. 83806, 83808-09.

¹³⁵ CFPB Data Sharing RFI, 81 Fed. Reg. 83806, 83808-09.

¹³⁶ Fin. Indus. Regulatory Auth., *Know Before You Share: Be Mindful of Data Aggregation Risks*, Investor Alert (Mar. 29, 2018), [[HYPERLINK "https://www.finra.org/investors/alerts/be-mindful-data-aggregation-risks"](https://www.finra.org/investors/alerts/be-mindful-data-aggregation-risks)].

¹³⁷ CFPB Data Sharing RFI, 81 Fed. Reg. 83806, 83808-09.

aggregator's use or resale of data, and other terms, such as the parties' respective liabilities to each other and the consumer.

APIs do not require consumers to provide their security credentials to the data aggregator; instead the consumer can authenticate the aggregator with the financial institution, and the institution will provide an access token to the aggregator. As a result, an API may limit a data aggregator's access to certain account information or account services, such as making electronic fund transfers.

b) Market Developments

By the late 1990s, firms began to offer services that relied on data gathered across all of a consumer's financial accounts. Initially, banks and other traditional account holders were the primary users of such account data, but eventually new firms entered the market and began offering services that used this data.¹³⁸ Some of these service providers use their own technology to access and gather the data, while others hire data aggregators to obtain the data.¹³⁹

Depending on one's definition of data aggregator, there may be at least 120 or as few as a handful of firms that engage in this activity. Vermont law requires parties that buy or sell third-party data to register with the secretary of state. As of March 2019, 121 firms had registered.¹⁴⁰ This total includes some entities—such as the National Student Clearinghouse and the nationwide consumer reporting agencies—that one would typically not think of as a data aggregator in the consumer finance market, even though they do gather and provide consumer data. Focusing more narrowly on financial data aggregators, others estimate that there are as few as six significant firms in the market.¹⁴¹

In recent years, data aggregators have signed data access agreements with many of the largest banks, allowing them to transition from credential-based data access to API-based access. These agreements often address issues such as liability and consumer control of data. And because APIs give banks greater certainty about the data shared with third parties, some institutions are providing their customers with greater information about the shared data. For example, Chase's website allows consumers to see (i) the financial apps that are accessing their

Commented [DT(99): As defined above, a "data aggregator" accesses data with the consumer's permission. The entities described in this paragraph (e.g., the CRAs) do not receive consumer permission to access or share data. It may be helpful to be clear in drawing this distinction, if that is the Taskforce's intent here.

¹³⁸ CFPB Data Sharing RFI, 81 Fed. Reg. 83806, 83808-09. In 2001, the OCC first issued guidance to depository institutions using third-party data aggregators. See Office of the Comptroller of Currency, OCC Bulletin 2001-12, *Bank-Provided Account Aggregation Services* (Feb. 28, 2001), [\[HYPERLINK "http://www.occ.gov/news-issuances/bulletins/2001/bulletin-2001-12.html"\]](http://www.occ.gov/news-issuances/bulletins/2001/bulletin-2001-12.html).

¹³⁹ CFPB Data Sharing RFI, 81 Fed. Reg. 83806, 83808-09.

¹⁴⁰ See Fast Company, "Here are the Data Brokers Quietly Buying and Selling your Personal Information," Mar. 2, 2019, [\[HYPERLINK "https://www.fastcompany.com/90310803/heres-the-data-brokers-quietly-buying-and-selling-your-personal-information"\]](https://www.fastcompany.com/90310803/heres-the-data-brokers-quietly-buying-and-selling-your-personal-information) (listing and describing each of the registered firms); Fast Company, "A Landmark Vermont Law Nudges over 120 Data Brokers out of the Shadows," Mar. 2, 2019, [\[HYPERLINK "https://www.fastcompany.com/90302036/over-120-data-brokers-inch-out-of-the-shadows-under-landmark-vermont-law"\]](https://www.fastcompany.com/90302036/over-120-data-brokers-inch-out-of-the-shadows-under-landmark-vermont-law).

¹⁴¹ MX Techs. Inc., "A List of Financial Data Aggregators in the United States" (Mar. 5, 2018), [\[HYPERLINK "https://www.mx.com/moneysummit/a-list-of-financial-data-aggregators-in-the-united-states"\]](https://www.mx.com/moneysummit/a-list-of-financial-data-aggregators-in-the-united-states) (listing seven financial data aggregators, two of which (Plaid and Quovo) have since merged, and noting that Intuit stopped offering its account aggregation services to third parties in 2016); Tearsheet, "A Buyer's Guide to Data Aggregation" (Feb. 19, 2019), [\[HYPERLINK "https://tearsheet.co/data/a-buyers-guide-for-data-aggregation/"\]](https://tearsheet.co/data/a-buyers-guide-for-data-aggregation/) (comparing the six top financial data aggregators).

accounts through Chase's API, (ii) the specific accounts being accessed, (iii) the specific account information being accessed, and (iv) the last time it was accessed. Chase's service also enables customers to turn off account access for particular applications or entirely.¹⁴² More broadly, some consortiums of market participants, as well as foreign jurisdictions, have developed industry standards and best practices for sharing data.¹⁴³

3. Artificial Intelligence / Machine Learning

The use of artificial intelligence, or AI, to develop or provide consumer financial services has increased significantly in recent years. "The concept of AI can vary meaningfully, but generally is associated with efforts to enable machines or computers to imitate aspects of human cognitive intelligence, such as vision, hearing, thinking, and decision making."¹⁴⁴ AI has been used in numerous innovations throughout the economy, from internet search engines to facial-recognition software. Within consumer financial services, AI has been used to develop, among other things, improved credit scoring models and fraud prevention tools.

Machine learning is a subset of AI that involves software learning or becoming "smarter" by analyzing data, without the need for additional human intervention. An internet search engine might learn which search results are the "correct" ones by analyzing the links that users click on; it could then make changes to its algorithms so that those links would appear first among future search results. Similarly, machine learning has the potential to help software more effectively identify money laundering and potentially predict fraud or payment default.

The Treasury Department identified three primary technological changes that undergird machine learning rapid advancement in recent years.¹⁴⁵ First, computing capabilities continue to improve significantly, thereby enabling software to analyze data more quickly. Second, as discussed above, digital data has expanded greatly. Forecasts predicted that 40 times more digital data will be produced in 2020 than in 2009, and more than a billion people have gained access to the internet in the span of approximately a decade—each creating digital data.¹⁴⁶ Third, mobile devices and other internet-connected devices are new sources of data, collecting information on consumers throughout the day. Cell phones, watches, fitness trackers, automobiles, "smart" household appliances, and many other products collect data while consumers engage in a variety of activities, in many cases unbeknownst to the consumer.¹⁴⁷ And once all these data are created, data aggregators play a key role in gathering and sorting them.

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If there is no source document recommend that this be removed or rephrased until there is a source document; it is not clearly articulating how AI/ML works.

¹⁴² Natalie Williams (Chase), Written Statement, "Symposium on Consumer Access to Financial Records" (Feb. 26, 2020), [[HYPERLINK "https://www.consumerfinance.gov/about-us/events/archive-past-events/cfpb-symposium-consumer-access-financial-records/"](https://www.consumerfinance.gov/about-us/events/archive-past-events/cfpb-symposium-consumer-access-financial-records/)].

¹⁴³ See, e.g., Fin. Data Exch., [[HYPERLINK "https://financialdataexchange.org/"](https://financialdataexchange.org/)] (a non-profit corporation who members include banks, data aggregators, and third-party providers and who is developing standard APIs); Clearing House, [[HYPERLINK "https://www.theclearinghouse.org/"](https://www.theclearinghouse.org/)] (a banking association and payments company owned by large commercial banks and which has published a Model Data Access Agreement).

¹⁴⁴ Treasury FinTech Report at 53.

¹⁴⁵ Treasury FinTech Report at 53 (citing Ananad Rao, *A Strategist's Guide to Artificial Intelligence, Strategy + Business* (Summer 2017), [[HYPERLINK "https://www.strategy-business.com/article/A-Strategists-Guide-to-Artificial-Intelligence"](https://www.strategy-business.com/article/A-Strategists-Guide-to-Artificial-Intelligence)]).

¹⁴⁶ A.T. Kearney, *Big Data and the Creative Destruction of Today's Business Models*, at 2 (2013), [[HYPERLINK "https://www.atkearney.com/documents/10192/698536/Big+Data+and+the+Creative+Destruction+of+Todays+Business+Models.pdf/fo5aed38-6c26-431d-8500-d75a2c384919"](https://www.atkearney.com/documents/10192/698536/Big+Data+and+the+Creative+Destruction+of+Todays+Business+Models.pdf/fo5aed38-6c26-431d-8500-d75a2c384919)].

Financial services companies use AI and machine learning in numerous ways. For example, and as discussed in more detail below, many creditors are using AI-based credit scoring models to underwrite loans. These models can analyze hundreds or thousands of data points about consumers, including information not traditionally thought of as financial data (*e.g.*, educational background), and find correlations between the inputted data and predicted creditworthiness. And they can do so at great savings to the firm: FICO found that using machine learning resulted in a 95 percent reduction in hours to build new credit models.¹⁴⁷ As another example, many companies use AI-based customer-services agents, sometimes known as “chat-bots,” who interact with consumers through online or mobile messaging functions. In addition, AI can help to enhance data security or identify fraud or money laundering.

B. FinTech Products and Services

The technological advances discussed above have enabled financial firms to develop a broad array of innovative products and services that touch on all aspects of consumer finance. A catalogue of all such financial innovations would be voluminous (and likely outdated by the time it were finished), so this section highlight developments in three areas at the core of consumers’ financial experiences: how consumers make payments, obtain credit, and manage their finances. In each area, FinTech-based innovation has shown the promise of promoting financial inclusion, though it has also raised consumer protection concerns that existing laws may not address sufficiently.

1. Payments

a) Global Developments

In many areas of the world, making payments through a mobile device has become “one of the primary ways to accelerate financial inclusion.”¹⁴⁸ In those places, mobile money, peer-to-peer (“P2P”) transfers, digital payments, and remittances can be faster, cheaper, and more widely available to many consumers than are traditional payment methods. By the end of 2017, more than 276 mobile-money services operated across 90 countries, with 191 million active users transferring approximately \$1 billion per day. Developing economies in particular have shown rapid rates of adopting mobile money. For example, over two-thirds of adult consumers in the combined populations of Kenya, Rwanda, Tanzania, and Uganda actively use mobile money.¹⁴⁹

M-Pesa, a Kenyan company, demonstrates mobile money’s potential for expanding financial inclusion. At least 84 percent of Kenyan adults living on less than \$2 per day—more

¹⁴⁷ Fair Isaac Corp., *Machine Learning and FICO Scores*, at 6 (2018), [[HYPERLINK "https://www.fico.com/en/latest-thinking/white-paper/machine-learning-and-fico-scores"](https://www.fico.com/en/latest-thinking/white-paper/machine-learning-and-fico-scores)]. (“FICO’s research team found that building a gradient-boosted decision tree scoring model analogous to the FICO Score took only 40 resource-hours [when using machine learning], compared to the roughly 800 resource-hours typically required to build the scorecards that compose a FICO Score model.”).

¹⁴⁸ UNGSA, *Early Lessons* at 11.

¹⁴⁹ *Id.* (citing GSMA, *State of the Industry Report on Mobile Money 2017* (2018), [[HYPERLINK "https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/05/GSMA_2017_State_of_the_Industry_Report_on_Mobile_Money_Full_Report.pdf"](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/05/GSMA_2017_State_of_the_Industry_Report_on_Mobile_Money_Full_Report.pdf)]).

than 21 million people—have access to M-Pesa.¹⁵⁰ One study showed that M-Pesa's P2P transfers cost users less than traditional payment methods, while the cost savings allowed them to send more money.¹⁵¹ Another study found that M-Pesa increased per capita consumption levels and lifted ~~two~~ percent of Kenyan households, or 194,000 households, out of poverty.¹⁵² M-Pesa and other mobile money providers thus offer “significant benefits for the unbanked and underbanked through lower fees, time savings, and reductions in travel costs,” and they have the potential to help lift a small percentage of consumers out of poverty.¹⁵³

China is the leader in mobile payments. By 2018, its mobile payment transaction volume exceeded \$41 trillion annually, and two providers—WeChat Pay and AliPay—have more than 1 billion users each. Their growth has been meteoric: less than a decade in operation, they now serve as the primary payment methods for 90 percent of people in China's largest cities.¹⁵⁴ This development is due in part to the failure of card-based terminals to catch on among many Chinese merchants, who either were reluctant to incur the swipe fees associated with cards or lacked the network connectivity required to process card transactions. WeChat Pay and Alipay use quick response (QR) codes, which require only one party to a transaction to be connected to a network. Thus, so long as the consumer's smartphone can get online, merchants and others can engage in transactions related to P2P money transfers, bill payments, mobile top-ups, ride hailing, insurance, and many other types of payments.¹⁵⁵

Other forms of mobile digital payments such as bill payments, merchant payments, international remittances, and government disbursements have also demonstrated growth over the past few years. Between 2011 and 2016, these transactions grew from 7.8 percent of all mobile money transactions to 18.8 percent. Notwithstanding that digital payments provide significant benefits for the unbanked and underbanked, they also present potential problems involving fraud by mobile money agents and data security breaches, as customers provide personal information as part of signing up and using the services.

b) U.S. Payments Market

The U.S. mobile payment market has grown comparatively slowly—it is a small fraction of the size of the Chinese market. According to the Treasury Department, this is in part due to certain barriers to entry and innovation, such as fragmented regulation of payments and the complexity of existing payments systems.¹⁵⁶ Most innovation in U.S. payment systems has been in consumer-facing areas, while the back-end clearing processes and times have remained

¹⁵⁰ *Id.* (citing Safaricom, *Safaricom PLC HY2019 Results Presentation*, 2nd November 2018 (2018), [[HYPERLINK "https://www.safaricom.co.ke/images/Downloads/Resources_Downloads/HY2019/HY2019_Results_Presentation.pdf"](https://www.safaricom.co.ke/images/Downloads/Resources_Downloads/HY2019/HY2019_Results_Presentation.pdf)]).

¹⁵¹ *Id.* (citing Morawczynski, O., *Exploring the Usage and Impact of “Transformational” Mobile Financial Services: The Case of M-Pesa in Kenya*, J. of E. Afr. Stud., 3(3), 509–525 (2009), [[HYPERLINK "https://doi.org/10.1080/17531050903273708"](https://doi.org/10.1080/17531050903273708)]).

¹⁵² *Id.* (citing Suri & Jack, *The Long-Run Poverty and Gender Impacts of Mobile Money*, Science, 354(6317) (2016), [[HYPERLINK "http://science.sciencemag.org/content/354/6317/1288"](http://science.sciencemag.org/content/354/6317/1288)]).

¹⁵³ *Id.*

¹⁵⁴ Aaron Klein, *Is China’s New Payment System the Future?*, Brookings Inst., June 2019, at 8 [[HYPERLINK "https://www.brookings.edu/wp-content/uploads/2019/06/ES_20190620_Klein_ChinaPayments.pdf"](https://www.brookings.edu/wp-content/uploads/2019/06/ES_20190620_Klein_ChinaPayments.pdf)].

¹⁵⁵ *Id.* at 6–7.

¹⁵⁶ Treasury FinTech Report at 159.

largely the same. “The user experience, products, and innovative solutions that have been introduced in recent years with the advent of mobile technology, in essence, layer on top of the existing core payment systems.”¹⁵⁷ Another impediment is that credit and debit cards work well for wealthy American consumers, who reap rewards benefits while avoiding account fees by paying their account each month, reducing consumer demand for alternative payment services.¹⁵⁸

Nonetheless, there have been areas of significant innovation in the mobile payments market. In 2017, a group of seven large U.S. banks established Zelle, a digital payments network.¹⁵⁹ Zelle enables consumers to make a P2P transfer to another registered user through a mobile device or the website of a participating banking institution. It was built on existing debit card infrastructure and allows transfers to clear and post almost instantly. Non-banks such as PayPal and Venmo have also developed significant P2P services. They are typically state-licensed money transmitters and allow consumers to transfer funds to other register users. Consumer can hold funds in their accounts or add or withdraw funds from external sources such as a bank account or credit card.¹⁶⁰

2. Lending

a) Underwriting

FinTech has fostered innovations in both the underwriting of loans and the mechanism by which consumers obtain them. With respect to underwriting, many firms employ machine learning-based analytical tools and credit scoring models. As discussed above, these tools are capable of processing vast amounts of data and improving their credit-risk predictions over time. Many firms also make use of alternative data, or any information not currently commonly reported on a standard credit report, to assess consumers’ credit worthiness. This is particularly important when a consumer is among the tens of millions of “credit invisibles,” who have thin or no files at the nationwide consumer reporting agencies and thus may not obtain credit without an alternative scoring method.¹⁶¹

Commented [DT(102): I’m not sure this is true for all Zelle payments. My understanding is that for “in-network” Zelle payments (i.e., those where the sender and receiver have accounts at banks that are Zelle members), the payments clear directly through EWS/Zelle, and settle separately through ACH.

Commented [VF(103): Citation?

¹⁵⁷ *Id.*

¹⁵⁸ Aaron Klein, *Is China’s New Payment System the Future?*, Brookings Inst., June 2019, at 19 [[HYPERLINK "https://www.brookings.edu/wp-content/uploads/2019/06/ES_20190620_Klein_ChinaPayments.pdf"](https://www.brookings.edu/wp-content/uploads/2019/06/ES_20190620_Klein_ChinaPayments.pdf)].

¹⁵⁹ Bank of America, BB&T, Capital One, JPMorgan Chase, PNC Bank, U.S. Bank, and Wells Fargo Bank own Early Warning Services, LLC, which in turn owns Zelle. See Early Warning Services, LLC, [[HYPERLINK "https://www.earlywarning.com/"](https://www.earlywarning.com/)]; Zelle, [[HYPERLINK "https://www.zellepay.com/"](https://www.zellepay.com/)].

¹⁶⁰ Treasury FinTech Report at 148.

¹⁶¹ Bureau of Consumer Fin. Protect., *Data Point: Credit Invisibles*, at 6 (2015), [[HYPERLINK "https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf"](https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf)]. See also Chris Brummer & Yesha Yadav, *Fintech and the Regulatory Trilemma*, 107 Geo. L.J. 235, 268 (2019). (“With more data to offer, borrowers that may once have been shunned from credit markets might now see themselves more fully included within the financial system. Simply relying on FICO scores or established credit histories might exclude communities that have historically lacked access to credit or financial services. A broader and more diverse set of data—including a user’s social contacts or shopping habits—may allow opportunities to foster greater inclusion in credit markets.”) But there are also reasons for caution. For one, finding statistical connections and meaning within large datasets is far from straightforward, and regulators and market participants can face high analytical costs in cleaning, collating, interpreting, and handling vast stores of data... Alternatively, digital datasets can lead to disparate and even unfair outcomes for would-be clients and customers. Historically disadvantaged minority communities, for example, could fare worse, not better, under some analytical systems dependent on longstanding records of using banking and insurance services.) Where the availability of data is limited due to the de jure or de facto exclusion of such

Bank transaction data, sometimes called “cash-flow data,” is a commonly used alternative data source, as it can include real-time data about deposits, payments, and overdrafts. **Algorithms can estimate the consumer's income or predict potential financial shortfalls.**¹⁶² Other relatively common types of alternative data include:

1. On time **Utility Utility** payments, such as electric, water, or cell phone bills. **Some consumers may prioritize these payments over other obligations, making them valuable to understanding a consumer's financial situation.**
2. Rental payments. Services such as Experian's RentBureau obtain **rental** payment history either directly from certain landlords and property management companies or after obtaining the consumer's permission to contact the landlord to obtain the payment history.
3. Information from specialty bureaus regarding payday loans, rent-to-own agreements, and short-term installment loans. For prime borrowers, obtaining such a loan could signal final distress. For a non-prime borrower, a history of repaying these loans could help demonstrate credit worthiness.
4. Social media accounts. Accounts that are newly created, have few connections, or contain information that differs from information on the consumer loan application can suggest fraudulent activity.
5. Educational background. A college or other degree could indicate greater job security and a higher income.¹⁶³

An industry survey of 22 large firms conducted in 2018 found that bank account transaction data **and utility and bill payments was were was** the most commonly used type of alternative data. **Other commonly used types included social media data, property ownership or rental information, or employment or licensing information. Some of the respondents stated that they did not use any such alternative data.**¹⁶⁴

The use of alternative data **in** underwriting raises some significant concerns. Some alternative data sources may be more prone to errors than data from traditional sources and could harm consumers with thin or no credit files. These accuracy concerns are exacerbated when the source of the information does not typically furnish information and thus may not have robust FCRA-procedures in place. In addition, underwriting models that use alternative data and machine learning could lead to discrimination on prohibited bases, or, if insufficiently tested, make credit decisions based on spurious correlations from the **data data**. The complexity of these models also makes it extremely difficult for **consumers**, creditors and regulators to

subgroups from credit systems, some lending algorithms may infer that higher interest rates and tighter credit conditions are warranted, and impose such terms accordingly. Such communities may also find themselves especially vulnerable to invasions of privacy and the accessing of sensitive data.¹⁶⁵

¹⁶² Treasury FinTech Report at 88.

¹⁶³ Experian & Aite, *Alternative Data Across the Loan Life Cycle: How FinTech and Other Lenders Use It and Why* (2018), [HYPERLINK "

¹⁶⁴ *Id.* at 10 & figure 6.

Commented [VF(104): This section seems to be about the data, this seems out of place as it is about the methods.

Commented [VF(105): Not accurate to only say that these are “priorities” and that is why they are paid, consider that these are a) necessities and b) may not require a credit pull or the same documentation or identification documents that credit does.

Also note that these categories can, and often are, reported to credit reporting agencies when the payments are in collections.

Commented [VF(106): Per the source Fig 5: Social Media data is used for marketing not underwriting.

Commented [VF(107): Per the source, fig 5: this is used for identity verification, no underwriting]

Commented [VF(108): Per the source, fig. 5: for account monitoring and collections, not underwriting.]

Commented [GS(109): This cite is off. Either it's pg 10 Fig 5 or Pg 11 Fig 6.

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understand how the inputted data relates to credit decisions.¹⁶⁵ And apart from the accuracy of the data or underwriting, consumers may also have concerns about the scope of data that is shared with third parties. Section V explores these issues in more detail.

Early findings suggest that use of machine learning and alternative data, in particular bank account transaction data, can promote financial inclusion by giving lenders a more accurate view of a consumer's creditworthiness. FinRegLab, a non-profit organization, studied data from six non-bank lenders that used cash-flow data and found that the "predictiveness of the cash-flow scores and attributes was generally at least as strong as the traditional credit scores and credit bureau attributes studied." It further found that "participants appear to be serving substantial numbers of borrowers who may have historically faced constraints on their ability to access credit." At the same time, FinRegLab did not observe fair lending concerns. Evidence from LendingClub, a large FinTech lender, shows that increasing reliance on alternative data improves credit ratings of borrowers on the margins faster than relying solely on FICO scores.¹⁶⁶ These borrowers tend to be disproportionately protected classes.¹⁶⁷

—And, as noted above, the Bureau issued its first no-action letter to a company that used traditional credit bureau data and alternative data in its machine learning model-based underwriting and pricing model.¹⁶⁸ The program As a condition to receiving the no-action letter, the company agreed to a model risk management and compliance plan which required it to analyze and appropriately address risks to consumers, as well as assess the real-world impact of alternative data and machine learning. Pursuant to the no-action letter, the company provided the Bureau with information comparing outcomes from its underwriting and pricing model (tested model) against outcomes from a hypothetical model that uses traditional application and credit file variables and does not employ machine learning (traditional model). The company independently validated the traditional model through fair lending testing to ensure that it did not violate antidiscrimination laws and shared access to credit and fair lending testing data with the Bureau. The results of the testing data were performed by the company and were not separately replicated by the Bureau. The results provided from the access-to-credit comparisons show that the tested model approves 27% more applicants than the traditional model and yields 16% lower average APRs for approved loans.

This reported expansion of credit access reflected in the results provided occurs across all tested race, ethnicity, and sex segments resulting in the tested model increasing acceptance rates by 23-29% and decreasing average APRs by 15-17%, showed that the tested model approves 227 percent more applicants than the traditional model and yielded 16 percent lower average APRs for approved loans.

¹⁶⁵ See, e.g., Steve Dickerson, et al., *Machine Learning: Considerations for Expanding Access to Credit Fairly & Transparently*, at § 4.2.6 (2020), [[HYPERLINK "http://info.h2o.ai/rs/644-PKX-778/images/Machine%20Learning%20%20Considerations%20for%20Fairly%20and%20Transparently%20Expanding%20Access%20to%20Credit.pdf"](http://info.h2o.ai/rs/644-PKX-778/images/Machine%20Learning%20%20Considerations%20for%20Fairly%20and%20Transparently%20Expanding%20Access%20to%20Credit.pdf)].

¹⁶⁶ Julapa Jagtiani & Catharine Lemieux, *The Roles of Alternative Data & Machine Learning in Fintech Lending: Evidence from the LendingClub Consumer Platform*, Federal Reserve Bank of Philadelphia Working Paper 18-15 (2018), [[HYPERLINK "http://leeds-faculty.colorado.edu/bhagat/FintechLending.pdf"](http://leeds-faculty.colorado.edu/bhagat/FintechLending.pdf)].

¹⁶⁷ Bureau of Consumer Fin. Protect., *Data Point: Credit Invisibles*, at 17-18 (2015), [[HYPERLINK "https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf"](https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf)].

¹⁶⁸ Bureau of Consumer Fin. Protect., *An Update on Credit Access and the Bureau's First No-Action Letter* (Aug. 6, 2019), [[HYPERLINK "https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/"](https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/)].

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b) Alternative Lending / P2P Lending

Non-bank FinTech lenders, also referred to as marketplace lenders, have grown rapidly in recent years. From 2013 to 2018, the share of unsecured consumer loans involving non-bank FinTech lenders rose from 5 percent to 38 percent.¹⁶⁹ Unlike traditional lenders, marketplace lenders operate largely or entirely online, taking credit applications through their websites or mobile apps rather than through in-person transactions. They also often use vast amounts of consumer data, including alternative data, in marketing and underwriting loans.

Marketplace lenders employ two primary models: (i) a partnership with a bank, in which the bank originates the loan but the marketplace lender sources, services, and funds it; and (ii) direct lending, in which case the marketplace lender has acquired the necessary state licenses to do business.¹⁷⁰ A bank partnership has the advantage of allowing the marketplace lender to piggyback on the bank's ability to extend loans to the maximum rate permitted in the bank's home state, even if that rate is higher than permissible in the consumer's home state.

Consumers at the margins—those with poor or no credit history or who have been discriminated against—may particularly benefit from marketplace lending. Because banks and other traditional lenders meet the credit demands of wealthier consumers, marketplace lenders have an incentive to seek out consumers who may have had difficulty obtaining credit in the past. In addition, some evidence suggesting that FinTech lenders may discriminate significantly less on pricing than do face-to-face lenders.¹⁷¹ At the same time, eConsumers consumers at the margins are also the most vulnerable to predatory lending, raising concerns that marketplace lending often involves loans with higher interest rates or borrowing costs when compared to bank loans. In addition, there are concerns that such lending can result in over-indebtedness or give rise to fraud.¹⁷²

3. Digital Savings and Financial Management

FinTech has enabled firms to offer an array of digital savings, investment, and financial planning products to consumers at low cost and with customized benefits. These can range from relatively simple savings tools, such as programs that automatically transfer funds at regular intervals to a savings account, a dedicated savings account linked to a mobile money application, or the ability to store cash in a mobile money account.¹⁷³ These digital options can be less costly and facilitate faster payments than traditional bank accounts. They also can help customers develop savings plan and allow them to receive automatic “nudges,” or reminders, that encourage saving on a regular basis—services that could be significantly more costly if a

¹⁶⁹ TransUnion, *FinTechs Continue to Drive Personal Loan Growth*, press release, Feb. 21, 2019, [[HYPERLINK "https://www.globenewswire.com/news-release/2019/02/21/1739107/o/en/FinTechs-Continue-to-Drive-Personal-Loan-Growth.html"](https://www.globenewswire.com/news-release/2019/02/21/1739107/o/en/FinTechs-Continue-to-Drive-Personal-Loan-Growth.html)].

¹⁷⁰ Treasury FinTech Report at 85.

¹⁷¹ Robert Bartlett, et al., *Consumer Lending Discrimination in the Fintech Era*, Nat'l Bureau of Econ. Research WP 25943, at 4 & 36 tbl. 3 (June 2019); [[HYPERLINK "https://www.nber.org/digest/oct19/minority-borrowers-pay-more-even-under-algorithmic-lending"](https://www.nber.org/digest/oct19/minority-borrowers-pay-more-even-under-algorithmic-lending)].

¹⁷² UNGSA, *Early Lessons* at 12.

¹⁷³ *Id.* at 13.

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bank's employee provided them.¹⁷⁴ Existing applications also can automatically move a consumer's money between accounts to avoid overdraft fees.

Other firms use data analytics, machine learning, and other computing advances to offer more sophisticated financial management tools. Data aggregation-based services can enable a consumer to go on financial "autopilot" by simplifying complex decisions and providing new ways of looking at a consumer's overall financial picture.¹⁷⁵ Services include product comparisons, investment or debt management, and budgeting. For example, a small portion of credit card users miss deadlines for earning promotional rates, and a small portion of bank-account holders pay the majority of overdraft fees. Artificial intelligence-based applications that use aggregated consumer data could help consumers predict whether they are the ones likely to pay the fees. In other cases, artificial intelligence-based applications provide financial advice by comparing a consumer's income and expenses to those of other consumers and making recommended budget changes. More generally, artificial intelligence-based applications can help predict how a consumer is likely to fare with a particular financial product or service and recommend to the consumer whether to purchase that product or service.

FinTech companies are able to provide financial management at lower cost because, among other things, they generally require few live employees, enabling consumers to obtain services traditionally reserved for the wealthier. Digital financial planning can also benefit younger consumers, such as those who are entering the work force, when their savings may be small or non-existent.¹⁷⁶ By establishing a pattern of saving and investing during this stage, consumer can build both positive savings habits and long-term wealth.

V. Regulatory Framework

Responsible innovation in consumer financial services market, including related to FinTech, has demonstrated that it has the potential to benefit consumers immensely by promoting competition and financial inclusion. By offering products and services that cost less, execute faster, and are accessible from mobile and other digital platforms, FinTech innovators can reach consumers on the margins of the financial services markets. Similarly, data aggregation services can enable firms to consider larger datasets that provide a more complete picture of a consumer's finances and expand the notion of a creditworthy consumer. Digital offerings also make product and price comparisons easier for consumers, encourage new entrants to key markets, and enable existing firms to expand their offerings, thereby increasing competition and consumer benefit.

At the same time, FinTech innovations carry significant risks, which are exacerbated by a regulatory regime with uncertain protection for consumers or obligations for service providers. There is significant uncertainty in at least three key areas: (1) the array of federal and state laws governing non-bank FinTech firms offering payments, lending, and other services; (2) rules regarding the control and use of consumer data, particularly with respect to data aggregators

¹⁷⁴ *Id.*

¹⁷⁵ Lael Brainard, *Where Do Consumers Fit in the Fintech Stack?*, at 1 (Remarks at "FinTech Risks and Opportunities: An Interdisciplinary Approach") (Ann Arbor, Michigan, Nov. 16, 2017), [[HYPERLINK "https://www.federalreserve.gov/news_events/speech/brainard20171116a.htm"](https://www.federalreserve.gov/news_events/speech/brainard20171116a.htm)].

¹⁷⁶ Treasury FinTech Report at 161.

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As consumers start to rely on financial autopilots, however, it is important that they remain in the driver's seat and have a good handle on what is happening under the hood. Consumers need to know and decide who they are contracting with, what data of theirs is being used by whom and for what purpose, how to revoke data access and delete stored data, and how to seek relief if things go wrong. In short, consumers should remain in control of the data they provide. In addition, consumers should receive clear disclosure of the factors that are reflected in the recommendations they receive. If these issues can be appropriately addressed, the new fintech capabilities have enormous potential to deliver analytically grounded financial services and simplified choices, tailored to the consumers' needs and preferences, and accessible via their smartphones.

and alternative data; and (3) the use of alternative data and machine learning in underwriting. The next section explores policymakers' challenges and options in these areas.

A. Regulation of Non-Bank FinTech Companies

1. Current Framework and Concerns

For many non-bank FinTech companies—including those that offer payments, remittances, and lending services—state laws provide the primary regulatory framework.¹⁷⁷ With state law typically comes registration or licensing requirements. Many non-bank FinTech companies must therefore acquire a separate license for each state in which they operate, and a nationwide footprint means acquiring a license in every state or territory.¹⁷⁸

The Treasury Department's 2017 FinTech Report identified a number of potential advantages of the state regulatory model. Chief among them, states serve as "laborator[ies] of innovation," able to test different approaches to new technologies, practices, and types of firms. The state model also has allowed firms to develop within a state before expanding operations. And state regulators may be able to respond best to the needs of their constituents.¹⁷⁹

The state model also presents a variety of drawbacks. Firms incur significant expense maintaining state licenses, ensuring compliance with each state's laws, and monitoring legal developments in each state.¹⁸⁰ These costs, many of which are relatively fixed, can be most burdensome for small companies or potential new market participants.¹⁸¹ Differences in state laws can also require firms to vary material attributes of their products or services depending on the applicable law.¹⁸² In some cases, such as with rate ceilings, state law may effectively prevent firms from offering products or services in certain locations. The inability of FinTech lenders to export their home-state interest rate can also make it difficult for them to compete with banks when offering similar products.

2. Lessons from the NCCF Report

Commented [VF(121)]: Concerned that there is no acknowledgement of the limitations of innovation; lending innovations cannot violate ECOA. The Dodd Frank Act specifically defines fair lending as fair, equitable and nondiscriminatory access to credit—meaning innovations meant to increase access to credit must be fair, equitable and non-discriminatory.

¹⁷⁷ *Id.* at 63–64.

¹⁷⁸ Some FinTech companies engaged in marketplace lending (discussed above) have avoided certain state-by-state requirements by piggybacking on a bank's ability to export home-state interest rates. The Second Circuit's 2015 decision, *Madden v. Midland Funding, LLC*, 786 F.3d 246 (2d Cir. 2015), threatened this arrangement by holding that a non-bank taking assignment of a loan originated by a national bank is not entitled to preemption from state usury laws. Since then, the OCC and FDIC have engaged in rulemakings to effectively overrule Madden as well as to clarify which entity is the "true lender" for assigned loans. As a result, non-bank FinTech companies' ability to avoid being subject to a wide variety of state laws is uncertain and in any event is limited to lending.

¹⁷⁹ Treasury FinTech Report at 66.

¹⁸⁰ Treasury FinTech Report at 65 (stating that, among other things, "some firms report that all-in licensing costs range from \$1 million to \$30 million"); Brian Knight, *Federalism and Federalization on the Fintech Frontier*, 20 Vanderbilt J. of Ent. & Tech. L. 129, 186 (2017).

¹⁸¹ Knight, 20 Vanderbilt J. of Ent. & Tech. L. at 186 (citing Kevin V. Tu, *Regulating the New Cashless World*, 65 Ala. L. Rev. 77, 112–13 (2013)).

¹⁸² Treasury FinTech Report at 65.

The NCCF's 1972 report addressed analogous issues regarding the regulation of consumer finance companies.¹⁸³ The Commission noted that several types of financial institutions offering consumer credit could choose to operate under either a federal or state charter, and it identified a number of potential benefits and risks of extending dual chartering to finance companies. General benefits included overcoming restrictions on market entry and innovation. More specifically, the Commission observed that incumbents, typically banks, often made unfounded economic arguments when lobbying states to impose restrictions on potential competitors. In turn, states sometimes rely on "specious" reasons to limit new market entrants, such as when certain states imposed "convenience and advantage" tests for licensing financing companies.¹⁸⁴ Because finance companies do not accept deposits, the Commission could not perceive any threat to consumers or market stability from greater competition in consumer lending.

Next, the Commission stated that "[o]ne of the most effective ways competition serves consumer interests is in the development of new products and services," and it identified at least four innovations that federal chartering could advance innovation.¹⁸⁵ First, federal chartering could lift the "oppressive restraint[]" of low ceilings on loan sizes, which increased costs to consumers by requiring them to take out multiple smaller loans instead of one larger loan.¹⁸⁶ Second, evidence suggested that federal chartering could permit consumers to renew loans more frequently. Third, it could also allow finance companies to extend loans at interest rates above what the consumer's home state permitted, thus encouraging lending to higher-risk consumers. Finally, state laws restricted the scope of credit-related services that finance companies could offer, and the Commission postulated that removing such limitations could allow finance companies to provide "one-stop shopping" for consumers seeking to invest funds or obtain credit, perhaps running the gamut from revolving credit to mortgage loans.¹⁸⁷

The Commission also identified two potential arguments against federal chartering of finance companies. First, it noted that consumer credit was primarily a local function, with finance companies typically making loans to consumers within a small geographic region, sometimes just a few city blocks. Combined with their inability to accept deposits, finance companies' operations thus did not implicate the broader public interest. Second, the Commission warned that credit markets were already subject to a "wide and rather haphazard variety of laws within most of the states" and, unless Congress were willing to preempt all states' laws, creating a new class of federally chartered finance companies could add to the complexity and regulatory segmentation of the consumer credit market.¹⁸⁸

The Commission concluded its analysis with a multi-prong recommendation. As an initial step, the Commission recommend that states remove anticompetitive restrictions on competition and innovation and that Congressionally directed research be conducted into the levels of competition and innovation in various states and local communities. In the event that these steps were not taken within four years of the Commission's Report, the Commission

¹⁸³ NCCF Report, Chapter 9.

¹⁸⁴ NCCF Report at 163.

¹⁸⁵ NCCF Report at 163.

¹⁸⁶ NCCF Report at 163.

¹⁸⁷ NCCF Report at 164.

¹⁸⁸ NCCF Report at 165.

recommended that Congress empower a new Bureau of Consumer Credit (“BCC,” similar to today’s Bureau) to issue national charters and supervise finance companies. Under this proposal, federal charters would allow finance companies to supersede state laws restricting market entry, rate ceilings, and the forms and terms of consumer credit (e.g., loan size or term). The BCC would be charged with establishing reasonable rate ceilings for federally chartered finance companies, while state law would continue to govern debtors’ rights and creditors’ remedies. As to supervision, the Commission recognized the potential value of various different arrangements, from having federal examiners supervise for compliance with both state and federal laws, to dividing responsibilities between federal and state examiners.¹⁸⁹

3. Potential Regulatory Frameworks

Much of the Commission’s analysis is applicable to the question whether a national approach would be preferable to state-by-state approach for regulating non-bank FinTech companies. In particular, non-bank FinTech lenders remain subject to state laws imposing rate ceilings and have difficulty providing one-stop shopping to consumers. Regulation of the consumer credit market remains segmented and adding a new federal scheme could increase complexity. But one key observation is inapplicable to non-bank FinTech company: Their lending practices are not primarily a local function. They operate digitally, through websites and mobile apps, often with few or no physical retail locations. Consequently, non-bank FinTech lenders are capable of providing services to consumers spread throughout the U.S.

Given the anti-competitive features of the current state-by-state approach and the absence of any natural geographic limitations on FinTech companies, it appears that a national approach would benefit greatly consumers and competition.¹⁹⁰ There are numerous specific frameworks one could consider,¹⁹¹ but two general approaches stand out: (i) a federal charter, and (ii) permitting non-bank FinTech companies to export their home-state laws in the same way that the Supreme Court’s *Marquette* decision permitted federally chartered banks to charge the maximum interest rate allowed the bank’s home state (the “*Marquette* approach”);¹⁹² even without a federal charter.¹⁹³

Under the federal-charter approach, a federal agency could issue national charters to non-bank FinTech companies that satisfied certain criteria. The OCC took a significant step in this direction in July 2018, announcing that it would grant national bank charters to certain

¹⁸⁹ NCCF Report at 165–67.

¹⁹⁰ See, e.g., Knight, 20 Vanderbilt J. of Ent. & Tech. L. at 185 (“Commentators who likely disagree significantly on what the substance of the law should be nevertheless recognize the value of efficiency provided by consistent national rules. Whether efficiency is best served by federalism or federalization is a case-by-case question. For example, Professor Barry Weingast describes ‘market-preserving federalism,’ in which a federalist structure encourages competition among governments in the regulation of markets and thus discourages rent-seeking and contributes to greater prosperity. If a market met those criteria, federalization would be unnecessary, if not harmful.”).

¹⁹¹ See generally *License to Bank: Examining the Legal Framework Governing Who Can Lend & Process Payments in the Fintech Age: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.* (Sept. 29, 2020), [[HYPERLINK "https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=406871"](https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=406871)].

¹⁹² *Marquette Nat'l Bank v. First of Omaha Serv. Corp.*, 439 U.S. 299 (1978).

¹⁹³ *Marquette Nat'l Bank v. First of Omaha Serv. Corp.*, 439 U.S. 299 (1978).

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FinTech lenders, even if they do not take deposits.¹⁹⁴ The OCC explained that a FinTech company with a national bank charter would be subject the same safety-and-soundness standards as all federally chartered banks. It also stated its expectation that such FinTech companies would demonstrate a commitment to financial inclusion.¹⁹⁵ A chartered FinTech company would not be subject to the varying state laws, including usury laws,¹⁹⁶ but rather could export its home-state interest rate and preempt other state requirements.¹⁹⁷ Since then, the OCC also announced plans for a payment charter that could allow FinTech companies offering payment processing services (e.g., remittances), but which do not accept deposits or make loans, to operate with the equivalent of a national money-transmitter license and potentially gain access to the Federal Reserve's payments system.¹⁹⁸

The OCC has encountered legal obstacles,¹⁹⁹ but, even so, Congress could ultimately choose to give the OCC, the Bureau, or another agency clear authority to issue federal charters to non-bank FinTech companies. This approach's benefits include reducing the costs that these companies incur maintaining licenses in, and complying with the laws of, various states. It also would also provide regulatory clarity for non-bank FinTech companies and consumers, as well as potentially leveling the playing field by making banks and non-banks subject to similar laws. And consumers could choose from among the same services and service providers, regardless of where they live, thereby furthering competition.

There are some potential drawbacks of a federal-charter approach. Most notably, a single federal model would largely replace states' ability to experiment with different approaches and laws. Extending the existing regulatory regime for banks to non-bank FinTech companies, as the OCC attempted to do, also may be an ill-suited fit. Banks already bear a significant regulatory burden that can impede innovation, and subjecting non-bank FinTech companies to the same burdens could likewise impede the innovation that charters would be intended to foster.²⁰⁰ To that end, some non-bank FinTech companies have purposely organized themselves in ways that avoid the regulatory burden that banks face, potentially making a federal charter unattractive for them.²⁰¹ Some industry members have also questioned whether the OCC expertise in some areas, such as payments, translates to the lending context.²⁰² The OCC should

¹⁹⁴ Office of the Comptroller of the Currency, *Policy Statement on Financial Technology Companies' Eligibility to Apply for National Bank Charters* (July 31, 2018), [[HYPERLINK "https://www.occ.gov/news-issuances/news-releases/2018/pub-other-occ-policy-statement-fintech.pdf"](https://www.occ.gov/news-issuances/news-releases/2018/pub-other-occ-policy-statement-fintech.pdf)].

¹⁹⁵ *Id.*

¹⁹⁶ *Marquette Nat'l Bank v. First of Omaha Serv. Corp.*, 439 U.S. 299 (1978).

¹⁹⁷ See Judith E. Rinearson & Mehreen Ahmed, *It's Ba-ack! OCC Planning A New Fintech Charter: "Payments Charter 1.0,"* 10 Nat'l L. Rev. 188, July 6, 2020.

[[HYPERLINK "https://www.natlawreview.com/article/it-s-ba-ack-occ-planning-new-fintech-charter-payments-charter-10"](https://www.natlawreview.com/article/it-s-ba-ack-occ-planning-new-fintech-charter-payments-charter-10)].

¹⁹⁸ *Lacewell v. Office of Comptroller of Currency*, No. 18 CIV. 8377 (VM), 2019 WL 6334895 (S.D.N.Y. Oct. 21, 2019) (holding that the OCC exceeded its authority by purporting to grant charters to companies that do not accept deposits).

¹⁹⁹ Treasury FinTech Report at 65-66 ("Banks face their own regulatory regimes, which are quite extensive and can impede innovation.").

²⁰⁰ Howell E. Jackson, *The Nature of the Fintech Firm*, 61 Wash. Univ. J.L. & Pol'y 9, 13-14 (2020).

²⁰¹ *License to Bank: Examining the Legal Framework Governing Who Can Lend & Process Payments in the Fintech Age: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 6-7 (Sept. 29, 2020) (testimony of Evert K. Sands, Lendstry), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrg-116-baoo-wstate-sandse-20200929.pdf"](https://financialservices.house.gov/uploadedfiles/hhrg-116-baoo-wstate-sandse-20200929.pdf)].

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be sensitive to the fact that many FinTech firms do not hold federally insured deposits, which suggests a less-stringent capital requirement may be appropriate – if any requirement is needed at all.

Under the *Marquette-second* approach, Congress would enact legislation that prohibits states from applying certain of their laws to non-bank FinTech companies chartered in other states. Only the FinTech's home-state laws would apply. Thus, a non-bank FinTech company based in Nebraska could charge the same maximum interest rate for all loans it originates, regardless whether a consumer resides in Nebraska, Minnesota, or elsewhere.

Commented [FP(126): The capital requirements may provide consumer protections beyond deposit insurance.

Chapter 10 discusses in detail the profound impact that the *Marquette* decision had on consumers and competition, much of which could be replicated in the non-bank FinTech markets. By removing price controls that prevent consumers from obtaining loans, the *Marquette*this approach could enable more accurate risk-based pricing of credit offers and lending that disproportionately benefits riskier consumers. Reducing barriers to entry could increase competition in states where consumers are currently underserved, promoting a greater variety of options for consumers. The *Marquette*This approach could also spur competition between states to develop appropriate regulatory regimes and attract FinTech companies, preserving the benefits of states serving as laboratories of experimentation.

The *Marquette-second* approach also has drawbacks. It would continue to subject non-bank FinTech companies to different regulatory regimes than federally chartered banks, even when they are engaged in the same activities. There is also the potential for a “race to the bottom,” in which some states develop regulations that attract FinTech companies but that do not sufficiently protect consumers. Even if such a race occurs, and its existence has been questioned in other contexts,²⁰² the Bureau has adequate authority to adopt regulations that would prevent significant consumer harm. Policymakers will need to weigh these potential benefits and risks in determining the best path forward.

B. Regulating the Sharing and Use of Consumer Data

Many of the recent innovations described above rely on third parties, often data aggregators, accessing a consumer's financial data and either using it to provide services to the consumer or transferring it to another party who will provide such services. Currently, there is significant uncertainty about the circumstances in which a financial institution must or may share data with a third party. Also uncertain is the degree to which existing laws apply to third parties and any resulting limits on their ability to use or transfer consumer data.

The Bureau has initiated a rulemaking that will consider these issues,²⁰³ so it is not necessary for the Taskforce to address them all in detail. It may be nonetheless worthwhile to outline a few of the relevant laws and considerations about which the Bureau and the public may wish to be mindful.

1. Current Regulatory Ambiguities and Consumer-Protection Concerns

²⁰² See Jonathan H. Adler, Jonathan H., Let Fifty Flowers Bloom: Transforming the States into Laboratories of Environmental Policy. Available at SSRN: [[HYPERLINK "https://ssrn.com/abstract=295424"](https://ssrn.com/abstract=295424) \t "blank"] or [[HYPERLINK "https://dx.doi.org/10.2139/ssrn.295424"](https://dx.doi.org/10.2139/ssrn.295424) \t "blank"].

²⁰³ Bureau of Consumer Fin. Protect., *Consumer Access to Financial Records*, 85 Fed. Reg. 71003 (Nov. 6, 2020).

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Commented [FP(129): Suggest reconsidering this sweeping statement; the Bureau is unlikely to have authority over all harms that would/could result.

a) *DFA section 1033*

DFA section 1033 is at the center of a consumer's ability share account data with a third party.²⁰⁴ It requires a covered person to, upon the consumer's request, provide the consumer with information concerning the product or service that the consumer obtained from the covered person, subject to certain exceptions. Such information "includ[es] information relating to any transaction, series of transactions, or to the account including costs, charges and usage data." The covered person must make the information available in an electronic form, usable by consumers.

The Bureau has determined that rulemaking to implement section 1033 is not self-executing, however, so its implementation is contingent on the Bureau's current rulemaking warranted. A key issue is whether a third party acting with the consumer's authorization is the "consumer" under section 1033. And, if it is, whether and in what circumstances the account holder can limit the third party's data access due to, among other things, concerns about fraud or other data misuse.²⁰⁵

b) *Consumer Consent, Privacy, and Data Security*

Although data aggregators obtain a consumer's consent before accessing or using data about the consumer, widespread concern exists that (1) consumers do not provide *meaningful* consent, and (2) data aggregators obtain more data, and retain it longer, than necessary to provide their product or service. For example, The Clearing House's 2019 consumer survey found that 80 percent of FinTech app users were not fully aware that the apps or third parties may store their bank account username and password and that, once aware of this fact, most surveyed consumers were uncomfortable with the level of access they had shared. The survey further found that less than a quarter of FinTech app users knew that financial apps often continue to have ongoing access to their data until the consumer affirmatively revokes authorization.²⁰⁶

Stakeholders have also highlighted concerns that data aggregators' user agreements are often unclear or silent about how consumers can opt of data collection.²⁰⁷ Stakeholders note that agreements state that the company will not store the consumer's account credentials or other information, but that they fail to disclose that the FinTech company will use a third-party data aggregator and that the aggregator will retain the consumers credentials and other data. In addition, user agreements also may omit terms regarding the duration of an aggregator's access

²⁰⁴ 15 U.S.C. § 5533.

²⁰⁵ E.g., 85 Fed. Reg. 71003, 71010.

²⁰⁶ Clearing House, *Consumer Survey: Financial Apps & Data Privacy*, at 3 (Nov. 2019), [[HYPERLINK "https://www.theclearinghouse.org/-/media/New/TCH/Documents/Data-Privacy/2019-TCH-ConsumerSurveyReport.pdf"](https://www.theclearinghouse.org/-/media/New/TCH/Documents/Data-Privacy/2019-TCH-ConsumerSurveyReport.pdf)].

²⁰⁷ Lael Brainard, *Where Do Consumers Fit in the Fintech Stack?*, at 14-15 (Remarks at "FinTech Risks and Opportunities: An Interdisciplinary Approach") (Ann Arbor, Michigan, Nov. 16, 2017), [[HYPERLINK "https://www.federalreserve.gov/newssevents/speech/brainard20171116a.htm"](https://www.federalreserve.gov/newssevents/speech/brainard20171116a.htm)]. See also Marcus Moretti & Michael Naughton, "Why Privacy Policies Are So Inscrutible," *The Atlantic* (Sept. 5, 2014), [[HYPERLINK "https://www.theatlantic.com/technology/archive/2014/09/why-privacy-policies-are-so-inscrutable/379615/"\].](https://www.theatlantic.com/technology/archive/2014/09/why-privacy-policies-are-so-inscrutable/379615/)

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to data, which can result in perpetual access unless the consumer affirmatively withdraws consent.²⁰⁸

Other regulators, including Financial Crimes Enforcement Network and Financial Industry Regulatory Authority, have noted that some criminals are using FinTechs to initiate fraudulent transactions.²⁰⁹

c) Application of the GLBA and FCRA to the Use, Sharing, and Accuracy of Consumer Data

Stakeholders advised that federal regulators have yet to examine data aggregators for compliance with the GLBA or Privacy and Safeguards Rules, and that there may be some uncertainty about whether a data aggregator is a “financial institution” subject to the statute and Privacy and Safeguards Rules. Similarly, neither the Bureau nor the FTC appear to have taken a position on whether a data aggregator is a consumer reporting agency or, if it is, whether a financial institution that provides access to consumer data is a “furnisher” under the FCRA. Based on the FCRA’s plain language, it would appear that many data aggregators would be CRAs because they assemble or evaluate consumer credit information and provide it to third parties for the purpose of, among other things, making credit decisions. ~~The furnisher questions raise complex potential legal questions given that financial institutions sometimes provide data through an API and other times have it taken from them through credential-based access.~~²¹⁰ Resolving these legal questions may also have significant impact on the incentives financial institutions have to share data with third parties.

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d) Application of Laws Limiting a Consumer’s Liability

EFTA, as implemented by Regulation E, limits a consumer’s liability arising from unauthorized electronic funds transfers.²¹¹ TILA, as implemented by Regulation Z, does the same for unauthorized credit card use.²¹² Questions arise whether consumers who share their account login credentials with a data aggregator still enjoy these liability limits and, if so, whether the data aggregator or the financial institution (*e.g.*, the consumer’s bank) is

²⁰⁸ Bureau of Consumer Fin. Protect., *Bureau Symposium: Consumer Access to Financial Records—A Summary of the Proceedings* 4–5 (July 2020) [[HYPERLINK "https://files.consumerfinance.gov/f/documents/cfpb_bureau-symposium-consumer-access-financial-records_report.pdf"](https://files.consumerfinance.gov/f/documents/cfpb_bureau-symposium-consumer-access-financial-records_report.pdf)].

²⁰⁹ Prepared Remarks of FinCEN Director Kenneth A. Blanco, delivered at the Federal Identity Forum and Exposition, *Identity: Attack Surface and a Key to Countering Illicit Finance* (Sept. 24, 2019), [[HYPERLINK "https://www.fincen.gov/news/speeches/prepared-remarks-fincen-director-kenneth-blanco-delivered-federal-identity-fedid"](https://www.fincen.gov/news/speeches/prepared-remarks-fincen-director-kenneth-blanco-delivered-federal-identity-fedid)]; Fin. Indus. Regulatory Auth., *Know Before You Share: Be Mindful of Data Aggregation Risks*, Investor Alert (Mar. 29, 2018), [[HYPERLINK "https://www.finra.org/investors/alerts/be-mindful-data-aggregation-risks"](https://www.finra.org/investors/alerts/be-mindful-data-aggregation-risks)].

²¹⁰ The dichotomy between APIs and credential-based access is sometimes blurred, as the latter can involve cooperation between data aggregators and financial institutions. As the Bureau observed, through a practice called “whitelisting,” a “[data] aggregator identifies its traffic to the bank, which allows the bank to permit the aggregator to access consumer data via credential-based access and screen scraping.” Bureau of Consumer Fin. Protect., *Consumer Access to Financial Records*, 85 Fed. Reg. 71003, 71007 n.19 (Nov. 6, 2020).

²¹¹ EFTA section 909(a); 15 U.S.C. § 1693g(a); 12 C.F.R. § 1005.6(b)(2).

²¹² TILA section 133; 15 U.S.C. § 1643; 12 C.F.R. § 1026.12(b).

responsible for making the consumer whole. While APIs may include provisions allocating liability, the Bureau may be pushed to provide a consistent default rule.

e) Application of UDA(A)P Prohibitions

The Bureau and the FTC have found that entities engaged in deceptive or unfair acts or practices under the DFA and FTC Act by falsely representing to consumers that the entity employed reasonable and appropriate measures to protect consumer data or otherwise failed to take appropriate steps to secure consumer data.²¹³ These agencies will need to consider how the UDA(A)P prohibitions apply to consumer-authorized data access in a way that is consistent with how it resolves the other questions discussed above.

2. Regulatory Approaches to Open Banking

As it implements DFA section 1033 and potentially clarifies application of other laws to consumer-authorized data access, the Bureau may wish to consider three observations. First, property law concepts—who “owns” consumer data—are unlikely to be useful in resolving complicated legal and policy questions. Advocates of open banking sometimes urge the Bureau to clarify that consumers (not account-holding institutions) own the account data. If one accepts this proposition, it may follow that consumers have the right to access that data and share it with third parties, and account-holding institutions could not deny access to a consumer-authorized third party. But, as Professor Emma Leong notes, “property law struggles to accommodate data ownership” because fundamentally “the concept of ownership sits uneasily with data.”²¹⁴ Data ownership might entail the ability to exclude others from using or accessing it, but this is inconsistent with reality that the account-holding institution necessarily retains and uses the data and can usually furnish it to third parties consistent with applicable law. Moreover, establishing who owns the data does not answer all relevant questions. It leaves open the question of when an account-holding institution should refuse to share data with a third party suspected of fraud. Resolving these policy questions first may help better inform the scope of any consumer right to access data.

Second, in developing an open banking regime, the Bureau will need to make a choice between a “supportive” and a “mandatory” approach. In general, open banking has three characteristics: “[1] customers having greater access to and control over their banking data; [2] financial institutions being required to share customer data with customers; and, [3] with the

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²¹³ See, e.g., Bureau of Consumer Fin. Protect., File No. 2016-CFPB-0007 (Dwolla, Inc.), [[HYPERLINK "http://files.consumerfinance.gov/f/201603_cfpb_consentorder-dwolla-inc.pdf"](http://files.consumerfinance.gov/f/201603_cfpb_consentorder-dwolla-inc.pdf)]; FTC Matter/File Nos. 1023142-X120032 (Wyndham Worldwide Corp.); 052-3148 (CardSystems Solutions, Inc.); 052-3136 (Superior Mortgage Corp.); 052-3096 (DSW Inc.); 052-3117 (Nations Title Agency, Inc.); 062-3057 (Guidance Software, Inc.); 072-3046 (Life is good, Inc.); 072-3055 (TJX Companies); and 052-3094 (Reed Elsevier, Inc.).

²¹⁴ Emma Leong, *Open Banking: The Changing Nature of Regulating Banking Data—A Case Study of Australia and Singapore*, 35.3 Banking & Fin. L. Rev. 443, NUS Centre for Banking & Finance Law Working Paper 20/02, at 11 (2020). Further, “[i]nformation may give rise to intellectual property rights but the law has been reluctant to treat information itself as property. When information is created and recorded for example to constitute an electronic database, there is a distinction between the information itself, the physical medium on which it is recorded (such as a disk) and the rights (such as database right and copyright) to which the information gives rise. Whilst the physical medium and intellectual property rights are treated as property, the information itself is not.” *Id.*

consent of customers, financial institutions sharing customer data with accredited third party providers . . . , which may include competing providers of financial services.”²¹⁵

In a supportive jurisdiction, regulators take steps to facilitate open banking without mandating it.²¹⁶ Existing banking laws or general data privacy rules govern a consumer’s right over account data. For example, in Singapore (as in the U.S.), account-holding institutions share information with third parties when doing so complies with existing bank secrecy and data protection regulations.²¹⁷ Regulations do not require the institution to use a particular means of sharing data (*e.g.*, APIs), and the third party does not have strictly defined rights or obligations. Rather, a consumer’s right to share data is determined largely by contract. Institutions can charge reasonable fees or deny overly burdensome data-sharing requests.

In a mandatory jurisdiction, regulators have enacted laws to compel adoption of open banking practices. Laws defines the rights and duties of third parties (*e.g.*, data aggregators) with respect to consumer data.²¹⁸ They also mandate the methods by which a third party can access—and the account-holding institution provides—information. They further address the types of data subject to mandatory sharing. Notably, choosing a mandatory open banking approach would seem to necessitate rules defining what constitutes a trusted third party to whom a financial institution must share data. Australia, for example, require accreditation, and the European Union subjects the third parties to the same privacy and other regulators as the account-holding institution. These regimes have also identified specific categories or types of data subject to mandatory sharing.²¹⁹

Third, the Bureau can use its Office of Innovation to inform and supplement its rulemaking. The Bureau’s innovation efforts—including the sandboxes, no-action letter policy, pilot advisory opinion program, and tech sprints—are still in their relative infancy. They have nonetheless shown great promise, and the Bureau would be wise to continue using them so that it can both encourage consumer-protective innovation and learn from its partnerships with market participants.

C. Regulation of Alternative Data and Machine Learning

²¹⁵ Leong, 35.3 Banking & Fin. L. Rev. at 1.

²¹⁶ Leong 35.3 Banking & Fin. L. Rev. at 3.

²¹⁷ *Id.*; Treasury FinTech Report at 34.

²¹⁸ Leong, 35.3 Banking & Fin. L. Rev. at 3. In a comparison of supportive and mandatory banking regimes in Singapore and Australia, respectively, Professor Leong concluded that a mandatory approach is better suited to achieve open banking goals of responsible sharing of accurate information.

²¹⁹ Australian regulators have identified four categories of information that may require differing treatment: (1) customer-provided data; (2) transaction data; (3) value-added customer; and (4) aggregated data sets. The European model draws a distinction between regulated account information service providers (AISPs) and payment initiation service providers (PISPs), each being subject to different regulations that acknowledge their respective risk profiles. Alternatively, many stakeholders have suggested that the Bureau limits access to those data that are for the express purpose for which consumer has shared or to certain limited purposes that the law defines. See, e.g., *License to Bank: Examining the Legal Framework Governing Who Can Lend & Process Payments in the Fintech Age: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 22–23 (Sept. 29, 2020) (testimony of Raúl Carillo), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrg-116-bao-wstate-carrillor-20200929.pdf"](https://financialservices.house.gov/uploadedfiles/hhrg-116-bao-wstate-carrillor-20200929.pdf)] (recommending that Congress limit data usage to specific categories rather than relying on consumer consent and collecting sources).

As discussed in Section IV.B.1 above, use of alternative data and machine learning ~~can~~ has the potential to promote financial inclusion, when carefully implemented and monitored, by giving lenders a more complete view of a consumer's creditworthiness. Consumers at the margin—those who score poorly or not at all under traditional crediting scoring models and who are disproportionately members of protected classes—may stand to gain the most from new underwriting methods. FinTech companies appear to be the most likely lenders. Banks and other lenders meet the credit demands of consumers with strong scores under traditional models (e.g., FICO), giving FinTech companies an incentive to use tools that identify which of the remaining consumers are also creditworthy.²²⁰ FinTech companies' reliance on digital platforms also may make them less apt to discriminate: One analysis found that racial discrimination occurs in both face-to-face and FinTech lending, but that FinTech lenders discriminate 40 percent less on pricing and effectively not at all in underwriting.²²¹

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Nonetheless, use of alternative data and machine learning methods raises numerous consumer protection and regulatory concerns, especially as it relates to bias and discrimination, about whether the information is accurate and complete and whether its use discriminates unlawfully against protected classes. Similarly, in Black box machine learning models—particularly when paired with alternative data—raises the specter of difficult-to-detect discrimination. These concerns in turn implicate consumer protections under the FCRA and ECOA.

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1. Accuracy Concerns and the FCRA

The FCRA imposes various requirements to assure the accuracy of information used to make credit decisions. CRAs must follow "reasonable procedures to assure maximum possible accuracy of the information" in consumer reports.²²² Users of consumer reports must provide notice to the consumer when they take adverse action based on information in a consumer report.²²³ And consumers have the right to dispute errors in their credit files with either a CRA or the party that furnished the information.²²⁴

While alternative data that third parties collect and aggregate for credit decisions would generally be subject to the FCRA, there are concerns that such data may not be reliable because they have not been collected properly or tested sufficiently.²²⁵ Intuitively, financial data would

²²⁰ Robert Clark, et al., *Digital Lenders Price Loans Inside a Black Box of Alternative Data*, S&P Global Market Intelligence, Nov. 8, 2018, [[HYPERLINK "https://www.spglobal.com/marketintelligence/en/news-insights/trending/uqhH3EPcmILf4T4S4dQmGg2"](https://www.spglobal.com/marketintelligence/en/news-insights/trending/uqhH3EPcmILf4T4S4dQmGg2)].

²²¹ Robert Bartlett, et al., *Consumer-Lending Discrimination in the Fintech Era*, Nat'l Bureau of Econ. Research WP 25943, at 4 & 36 tbl. 3 (June 2019), [[HYPERLINK "https://www.nber.org/digest/oct19/minority-borrowers-pay-more-even-under-algorithmic-lending"](https://www.nber.org/digest/oct19/minority-borrowers-pay-more-even-under-algorithmic-lending)].

²²² FCRA section 607(b) (15 U.S.C. § 1681e(b)).

²²³ FCRA section 615(a) (15 U.S.C. § 1681m(a)).

²²⁴ FCRA section 611(a) (15 U.S.C. § 1681i(a)); 12 C.F.R. § 1022.43.

²²⁵ See, e.g., Mikella Hurly & Julius Adebayo, *Credit Scoring in the Era of Big Data*, 18 Yale J. of L. & Tech. 152–53 (2017), [[HYPERLINK "https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1122&context=yjolt"](https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1122&context=yjolt)] ("[T]hese new tools hold the risk that even the most careful consumers could fall victim to flawed or inaccurate data. The problem of inaccuracy has long proved a challenge for traditional credit-scoring systems, which utilize a relatively limited set of data points. Big-data credit-assessment tools are likely to compound this problem.") (internal citations omitted); U.S. Gov't Accountability Office, *Financial Technology: Agencies Should Provide Clarification on Lenders' Use of Alternative Data*, GAO-19-111, at 37 (Dec. 2018), [[HYPERLINK "https://www.gao.gov/assets/700/696149.pdf"](https://www.gao.gov/assets/700/696149.pdf)] (summarizing interviews with industry members and stating that,

seem more accurate than non-financial data. Most notably, FinTech companies have explored use of cash-flow data and, as discussed above, early results suggest that ~~they~~ can be accurate, non-discriminatory, and beneficial to financial inclusion.²²⁶ Other types of financial information that could be used to evaluate creditworthiness include payments related to utilities (e.g., electric or gas), telecommunications (e.g., telephone, internet, cable), rental housing, short-term installment loans, and other small-dollar or payday loans. Frequently discussed types of non-financial data ~~include~~ information about consumers' education, occupation, social media use (including about a consumer's friends and contacts), geographic location, and other behavioral data such ~~has as~~ internet browsing history, where they shop, what they purchase, and what mobile devices they use.²²⁷ All these financial and non-financial data can be challenging to furnish or collect consistently and may require assessing, among other things, whether the type of data or ~~their~~ sources skew towards certain consumers.²²⁸ For these reasons, the Taskforce elsewhere recommends that the Bureau study whether alternative data in consumer reports are accurate and whether ~~is~~they are furnished consistently such that consumers with similar payment history or other attributes would have similar information appear on their consumer reports.

Concerns have been raised about whether some alternative data raise broader consumer protection concerns. For example, state and local laws may prohibit electric or gas utilities from shutting off service in certain circumstances, such as during winter.²²⁹ ~~While there are some instances where consumers are unable to pay their debts for reasons beyond their control, there is no reason to treat utility debts differently than other debts for purposes of assessing a borrower's creditworthiness.~~

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2. Discrimination Concerns and ECOA

With respect to credit transactions, ECOA prohibits discrimination on the basis of several protected classes—most notably race, color, religion, national origin, sex or marital status, or age.²³⁰ As implemented by Regulation B, ECOA prohibits both ~~intentional discrimination disparate treatment~~ and facially neutral practices that have a disparate impact on a protected class. Notwithstanding such a disparate impact, however, a creditor may continue a practice if it "meets a legitimate business need that cannot reasonably be achieved as well by

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Reporting of late payments could also undermine state consumer protections, such as prohibitions against wintertime shut offs for elderly or other vulnerable consumers, by compelling them to pay seasonally high bills even if it doesn't leave them enough money to pay for other critical expenses such as food.

There actually IS a reason to treat utility debts differently—they are necessities.

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²²⁶ [s]ix industry stakeholders stated that ensuring many forms of alternative data are accurate without validation of the reliability of the data sources is difficult"); Nat'l Consumer L. Ctr., *Big Data: A Big Disappointment for Scoring Consumer Credit Risk*, at 14-27 (Mar. 2014), [[HYPERLINK "https://www.nclc.org/images/pdf/pr-reports/report-big-data.pdf"](https://www.nclc.org/images/pdf/pr-reports/report-big-data.pdf)].

²²⁷ See, *supra*, at Section IV.B.1.

²²⁸ See *Examining the Use of Alternative Data in Underwriting & Credit Scoring to Expand Access to Credit: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 6-8 (July 25, 2019) (testimony of Chi Chi Wu, Nat'l Consumer L. Ctr.), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrg-116-baoo-wstate-wuc-20190725.pdf"](https://financialservices.house.gov/uploadedfiles/hhrg-116-baoo-wstate-wuc-20190725.pdf)].

²²⁹ See Warren E. Agin & Aki Estrella, *The Biggest Data: Advising Clients about Alternative Lending Models and the Regulatory Scrutiny They Generate*, Am. Bar Assoc., Aug. 15, 2019, [[HYPERLINK "https://www.americanbar.org/groups/business_law/publications/blt/2019/08/alt-lending-models/"](https://www.americanbar.org/groups/business_law/publications/blt/2019/08/alt-lending-models/)].

²³⁰ See *Examining the Use of Alternative Data in Underwriting & Credit Scoring to Expand Access to Credit: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 5 (July 25, 2019) (testimony of Chi Chi Wu, Nat'l Consumer L. Ctr.), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrg-116-baoo-wstate-wuc-20190725.pdf"](https://financialservices.house.gov/uploadedfiles/hhrg-116-baoo-wstate-wuc-20190725.pdf)].

²³⁰ 15 U.S.C. § 1691(a).

means that are less disparate in their impact.²³¹ The legitimate business need exception thus permits use of data that is accurate and predictive, even if it replicates disparities that are systemic in society.²³²

Some types of alternative data, especially non-financial data, raise ECOA concerns because they may correlate with protected classes and bear no obvious relationship to creditworthiness.²³³ Some types of data might simultaneously provide useful information about credit risk but could disproportionately impact protected classes. For example, although one ~~there are~~may believe there are legitimate reasons for using a consumer's social media history or educational background, as discussed above, they may serve as a proxy for a prohibited basis~~are also likely to correlate with race or some other characteristic~~. And even otherwise nondiscriminatory data could be problematic depending on how it is collected—drawing from an imbalanced or flawed dataset could lead to disparities in lending decisions.²³⁴

Artificial intelligence and machine learning-based underwriting algorithms raise complicated fair lending issues that may be difficult to resolve. The sheer number of variables and their combinations—hundreds or potentially thousands—they use makes it extremely difficult to determine the predictive value or potentially discriminatory impact of particular data points.²³⁵ Moreover, machine learning tools are designed to constantly “learn” and improve their models, such that there may be no static underwriting formula for institutions or regulators to evaluate. The Treasury Department thus observed that “applying traditionally accepted practices of model validation and back-testing may be challenging” and that “[m]achine learning based models that require significant amounts of data would generally suffer from the absence of past credit-cycle data to ‘train’ the model.”²³⁶

Some experts warn that the complexity of machine learning-based algorithms may mask their reliance on proxies that are highly correlated with protected classes.²³⁷ Artificial intelligence derives complex statistical models by finding links between the inputted data and various target variables or outcomes. As Professors Schwarcz and Prince describe, its sole goal

²³¹ 12 C.F.R. part 1002, comment 1002.6(a)-2.

²³² *Examining the Use of Alternative Data in Underwriting & Credit Scoring to Expand Access to Credit: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 15 (July 25, 2019) (testimony of Chi Chi Wu, Nat'l Consumer L. Ctr.), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrig-116-ba00-wstate-wuc-20190725.pdf"](https://financialservices.house.gov/uploadedfiles/hhrig-116-ba00-wstate-wuc-20190725.pdf)].

²³³ U.S. Gov't Accountability Office, *Financial Technology: Agencies Should Provide Clarification on Lenders' Use of Alternative Data*, GAO-19-111, at 30-35 (Dec. 2018), [[HYPERLINK "https://www.gao.gov/assets/700/696149.pdf"](https://www.gao.gov/assets/700/696149.pdf)]; *Examining the Use of Alternative Data in Underwriting & Credit Scoring to Expand Access to Credit: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 4-8 (July 25, 2019) (testimony of Chi Chi Wu, Nat'l Consumer L. Ctr.), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrig-116-ba00-wstate-wuc-20190725.pdf"](https://financialservices.house.gov/uploadedfiles/hhrig-116-ba00-wstate-wuc-20190725.pdf)].

²³⁵ See Robert Clark, et al., *Digital Lenders Price Loans Inside a Black Box of Alternative Data*, S&P Global Market Intelligence, Nov. 8, 2018, [[HYPERLINK "https://www.spglobal.com/marketintelligence/en/news-insights/trending/ughH3EPcmILf4T4S4dOmGg2"](https://www.spglobal.com/marketintelligence/en/news-insights/trending/ughH3EPcmILf4T4S4dOmGg2)].

²³⁶ Treasury FinTech Report at 137.

²³⁷ Daniel Schwarcz & Anya Prince, *Proxy Discrimination In The Age Of Artificial Intelligence And Big Data*, 105 Iowa. L. Rev. 1257, 1273-76 (2020); *Examining the Use of Alternative Data in Underwriting & Credit Scoring to Expand Access to Credit: Hearing Before the H. Comm. on Fin. Servs. Task Force on Fin. Tech.*, at 12 (July 25, 2019) (testimony of Kristin N. Johnson, Tulane Univ. Law Sch.), [[HYPERLINK "https://financialservices.house.gov/uploadedfiles/hhrig-116-ba00-wstate-johnsonk-20190725.pdf"](https://financialservices.house.gov/uploadedfiles/hhrig-116-ba00-wstate-johnsonk-20190725.pdf)].

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is to find such links, and it “entirely ignores potential explanations for these relationships. . . . For this reason, the ultimate statistical models that [artificial intelligence] derive are often nearly impossible to explain intuitively; the models work, but no one—including the programmer, the firm that relies on it, or the [artificial intelligence] itself—can explain why or how it does so.”²³⁸ Furthermore, proxy discrimination may be “virtually inevitable” whenever a prohibited characteristic (e.g., race) has predictive power that cannot be measured more directly by facially neutral data.²³⁹ In such circumstances, artificial intelligence may search for data relationships that replicate as closely as possible the predictive power of the prohibited characteristic—that is, for proxies.

Despite these legitimate concerns, there is also reason to believe that the complexity of machine learning could make underwriting methods less discriminatory. Known as the “multiplicity of good models,” machine learning can be used to create large numbers of models that have nearly identical predictive quality.²⁴⁰ Given these nearly equivalent models, lenders can choose to use one that maximizes fairness and is least likely to discriminate on a prohibited basis.

Improvements in market practices also hold significant promise. Creditors, data aggregators, and CRAs have regulatory and market incentives to produce better data and models that are more predictive of credit risk, minimally correlated with protected classes, and derived from robust and complete datasets.²⁴¹ Algorithmic approaches, such as adversarial de-biasing, may enable algorithms to “unlearn” better account for bias within models**bias**, though some of these methods have an uncertain status under ECOA.²⁴² And market participants such as IBM and Microsoft have created free, open-source toolkits that can attempt to evaluate and correct for bias in algorithms.²⁴³ As in other areas of innovation, these market developments, if combined with the Bureau’s robust and judicious guidance, could help foster competition and inclusion in consumer financial services.

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²³⁸ Schwarz & Prince, 105 Iowa. L. Rev. at 1274.

²³⁹ Schwarz & Prince, 105 Iowa. L. Rev. at 1273, 1276.

²⁴⁰ Steve Dickerson, et al., *Machine Learning: Considerations for Expanding Access to Credit Fairly & Transparently*, at § 2 (2020), [[HYPERLINK "http://info.h2o.ai/rs/644-PKX-778/images/Machine%20Learning%20-%20Considerations%20for%20Fairly%20and%20Transparently%20Expanding%20Access%20to%20Credit.pdf"](http://info.h2o.ai/rs/644-PKX-778/images/Machine%20Learning%20-%20Considerations%20for%20Fairly%20and%20Transparently%20Expanding%20Access%20to%20Credit.pdf)].

²⁴¹ Warren E. Agin & Aki Estrella, *The Biggest Data: Advising Clients about Alternative Lending Models and the Regulatory Scrutiny They Generate*, Am. Bar Assoc., Aug. 15, 2019, [[HYPERLINK "https://www.americanbar.org/groups/business_law/publications/blt/2019/08/alt-lending-models/"](https://www.americanbar.org/groups/business_law/publications/blt/2019/08/alt-lending-models/)].

²⁴² Joyce Xu, *Algorithmic Solutions to Algorithmic Bias: A Technical Guide*, Towards Data Sci., June 18, 2019, [[HYPERLINK "https://towardsdatascience.com/algorithmic-solutions-to-algorithmic-bias-aef5eaaf6565"](https://towardsdatascience.com/algorithmic-solutions-to-algorithmic-bias-aef5eaaf6565)]. Adversarial de-biasing involves using a training dataset to develop two models: the first model uses various factors to predict creditworthiness, and the second looks at outcomes from the first model and attempts to determine the race (or other protected class) of each borrower. The first model can be continually tweaked until the second model is no longer able to predict the consumer’s race, at which point the first model has been “de-biased.” Given the explicit use of race and other prohibited factors, there are questions about how creditors could use adversarial de-biasing consistent with ECOA’s protections.

²⁴³ IBM Research, AI Fairness 360, [[HYPERLINK "https://aif360.mybluemix.net/"](https://aif360.mybluemix.net/)] (last visited Nov. 11, 2020); Sarah Bird, et al., *Fairlearn: A Toolkit for Assessing & Improving Fairness in AI*, Microsoft, Sept. 22 2020, [[HYPERLINK "https://www.microsoft.com/en-us/research/uploads/prod/2020/05/Fairlearn_WhitePaper-2020-09-22.pdf"](https://www.microsoft.com/en-us/research/uploads/prod/2020/05/Fairlearn_WhitePaper-2020-09-22.pdf)].

Deliberative draft
2020.11.13

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