

# The Use of Cash-Flow Data in Underwriting Credit

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*Policy Overview*

FEBRUARY 2020

## About FinRegLab

FinRegLab is a non-profit research organization that was founded on the premise that independent, rigorous research is a primary ingredient in helping develop market norms and policy solutions that enable responsible innovation in financial services.

## Acknowledgments

This *Policy Overview* and FinRegLab's underlying Report, *The Use of Cash-Flow Data in Underwriting Credit: Market Context & Policy Analysis*, were made possible through founding support from Flourish/Omidyar Network. Additional support was provided by the Milken Institute, which enabled FinRegLab to evaluate cash-flow data in small business credit underwriting. Detailed information on our funders can be found on the inside back cover.

We would like to extend a special note of appreciation for their leadership and facilitation of FinRegLab's policy working groups to Melanie Brody, Mayer Brown; Mark Schultz, Capital One; P-R Stark, Oliver Wyman; and Corey Stone, Financial Health Network. Thanks also to the Fintech Team at the Federal Reserve Bank of San Francisco for co-hosting a symposium entitled "The Role of Consumers in the Data Ecosystem."

FinRegLab would also like to recognize the individuals and organizations who participated in the policy working groups as listed in Appendix A in the *Market Context & Policy Analysis* report, the participants of the Data Ecosystem symposium, and stakeholders who participated in interviews.

We are particularly grateful to Marsha Courchane and Arthur Baines, Charles River Associates, for the role they played in designing and executing the empirical research analysis. We are also grateful to Thomas P. Brown and Stephen J. Bandrowsky, Paul Hastings, for legal assistance throughout the course of the research process.

We would also like to thank the following individuals who provided feedback on this report. They include:

Alex Acree; Mitchell Sandler; Kaitlin Asrow; Melanie Brody & Tori Shinohara, Mayer Brown; Thomas P. Brown, Paul Hastings; Jonah Crane, Klaros Group; Eric Goldberg, Akerman; David Medine, Consultative Group to Assist the Poor; Karen Mills & Annie V. Dang, Harvard Business School; Chuck Muckenfuss, Gibson Dunn; Larry Rosenberger; David Silberman; David Stein, Covington & Burling; Corey Stone, Financial Health Network; Diane Thompson; ChiChi Wu, National Consumer Law Center

We would also like to acknowledge the FinRegLab team who worked on the research, convenings, and reports. They include: Jennifer Chasseur, Kelly Thompson Cochran, Sarada Dhulipala, Aaron Milner, Kerrigan Molland, P-R Stark, Stephen Stolzenberg, and Michelle Wu.

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# 1. INTRODUCTION

As digital information has exploded in the past 15 years, the U.S. financial sector has accelerated its search for “alternative” or “non-traditional” data to strengthen credit underwriting. One of the most promising sources is cash-flow information, particularly data from deposit and prepaid accounts. Because the data shows inflows, outflows, and reserves, it can provide a more detailed and timely picture of how applicants manage their finances than traditional credit reports.

This information could be vital for millions of consumers and small businesses that struggle to access affordable credit because of information barriers. Approximately 20 percent of U.S. consumers lack sufficient traditional credit history to predict their repayment risk using traditional scoring models.<sup>1</sup> Millions of small businesses also struggle to access credit because they have not yet built financial track records.<sup>2</sup> And even for more established applicants, traditional credit reports only reflect certain information for particular types of debts. A more complete picture of applicants’ finances can potentially help lenders better differentiate risks, particularly when deciding whether and on what terms to extend credit to borrowers with non-prime credit scores.

Cash-flow data is also increasingly easy to access in electronic form. Approximately 96 percent of U.S. households have bank, credit union, or prepaid accounts, and small businesses are generating increasing amounts of data through checking accounts, accounting software, and payment processing systems.<sup>3</sup> In addition, intermediaries called data aggregators have emerged as the hub of a new system to transmit account data at customers’ direction to support a broad range of financial products and services, including credit. As of 2019, that system reportedly can obtain data from at least 95 percent of U.S. deposit accounts.<sup>4</sup>

These developments suggest that widescale adoption of cash-flow data in credit underwriting could produce substantial benefits for borrowers and lenders alike, most notably by expanding access to credit, improving risk prediction and lender efficiency, and enhancing competition and innovation.

<sup>1</sup> Consumer Financial Protection Bureau, Data Point, Credit Invisibles 4-6 (2015).

<sup>2</sup> FinRegLab, The Use of Cash-Flow Data in Underwriting Credit: Small Business Spotlight 4-11 (2019).

<sup>3</sup> Federal Deposit Insurance Corporation, 2017 FDIC National Survey of Unbanked and Underbanked Households 1, 7, 9-11, 12, table ES.5, 34-38, 48-58 (2018); FinRegLab, Small Business Spotlight at 11-12.

<sup>4</sup> Michael Deleon, A Buyer’s Guide to Data Aggregation, Tearsheet (Feb. 19, 2019); Ron Miller, Plaid Expands Financial Service API to Include All US Banks, [techcrunch.com](https://techcrunch.com) (Feb. 5, 2019).

## THE USE OF CASH-FLOW DATA IN CREDIT UNDERWRITING PROJECT

FinRegLab's research on the use of cash-flow data in credit underwriting is summarized in multiple reports:

The *Empirical Research Findings (2019)* summarizes our applied research based on data from six non-bank financial services providers—Accion, Brigit, Kabbage, LendUp, Oportun, and Petal—that are using cash-flow data in an effort to provide unsecured, relatively short term credit to consumers and businesses who may have difficulty obtaining loans from traditional sources. We retained Charles River Associates to help us design and conduct an independent analysis of the participants' cash-flow variables and scores based on actual loan performance. We found compelling evidence that the cash-flow metrics were predictive of credit risk across the diverse set of providers, populations, and products studied.

The *Small Business Spotlight (2019)* details the evolution of the use of cash-flow data in small business lending. It explained the reasons why electronic cash-flow data may be particularly useful in the small business context, presented evidence of its increasing use by a diverse range of incumbents and new entrants, and noted market and policy issues that may affect the nature and pace of further expansion.

*The Market Context & Policy Analysis (2020)* provides a detailed snapshot of the use of cash-flow data in U.S. consumer lending and the development of the system for transferring data between firms before analyzing policy and regulatory issues raised by cash-flow underwriting in both consumer and small business credit markets. It builds on our previous reports, stakeholder interviews, and the deliberations of three working groups that FinRegLab convened to solicit insights from more than 80 representatives of fintech companies, banks, data aggregators, advocacy organizations, and research institutions. The report was also informed by a November 2019 symposium on "The Role of Consumers in the Data Ecosystem" that we co-hosted with the Fintech Team at the Federal Reserve Bank of San Francisco.

Stakeholder discussions shaped our understanding of particular issues, but the three reports reflect FinRegLab's independent analysis in all respects.

FinRegLab expects to release a fourth report later in 2020 with the Financial Health Network and Flourish to provide a detailed description of existing federal consumer financial laws that implicate credit underwriting and the broader system for customer-permissioned data transfers.

Yet despite these potential benefits, use of cash-flow data is uneven in U.S. credit markets today. Non-bank fintech companies and some credit reporting and scoring incumbents have developed cash-flow models, and a diverse range of companies have begun using electronic cash-flow data in small business lending. But banks' and credit unions' use of such information is limited in many consumer credit markets, despite their access to account data for their existing customers. Federal regulators issued joint guidance in December 2019 noting the potential benefits of cash-flow data, but it remains to be seen how banks and credit unions will react in light of remaining market and regulatory uncertainties.<sup>5</sup>

FinRegLab has been investigating the use of cash-flow data in credit underwriting by conducting an empirical assessment of its benefits and risks, as well as market and policy analyses of the challenges to its wider adoption. We viewed the project as a useful case study at the intersection of two broader financial innovation trends: (1) the transformation of automated credit underwriting as firms experiment with new data and analytical techniques; and (2) efforts to structure the new data transfer system to enhance customer control and spur greater competition and innovation in financial services markets.

This Policy Overview distills the analyses from our third research report concerning the policy and regulatory issues raised by cash-flow underwriting in both consumer and small business markets. Specifically, we find that cash-flow data is beginning to expand access to credit and deliver the other benefits discussed above, but competitive, coordination, and compliance issues concerning both

<sup>5</sup> Board of Governors of the Federal Reserve System, Consumer Financial Protection Bureau, Federal Deposit Insurance Corporation, National Credit Union Administration & Office of the Comptroller of the Currency, Interagency Statement on the Use of Alternative Data in Credit Underwriting (Dec. 3, 2019) (hereinafter Interagency Alternative Data Statement).

credit processes and related data flows are making it difficult to reach scale and increasing risks and tradeoffs for borrowers. While some positive market developments are occurring, uncertainty about the application of existing laws and inconsistency among market actors could become an increasing source of inefficiency and risk as affected markets continue to expand and evolve.

The report analyzes both current initiatives and future options to address these emerging policy issues, including accelerating the adoption of safer and more efficient data transfer technologies, developing processes and tools to foster meaningful customer control over their data, clarifying and strengthening existing customer protections, and increasing supervision of non-bank actors. It also identifies certain broader cross-cutting questions, such as the potential role for standards in scaling innovation and increasing customer-friendly competition, the relationship between customer control and customer protection in data use and sharing, and the potential need for federal legislation to provide more consistent, comprehensive frameworks to govern data used for various financial purposes.

Resolving the complex and interlocking issues raised by cash-flow underwriting may ultimately depend on a combination of market-led, regulatory, and legislative initiatives. In the near term, increased engagement by federal regulators through research, monitoring, and interpretive activities could be particularly useful, in part by providing sharper focus and greater certainty to industry self-governance and legislative initiatives. In particular, addressing market challenges and customer protection issues in the underlying data transfer system in the next few years could set the stage for more rapid expansion in cash-flow underwriting in years to come. These issues are potentially important for helping beneficial practices to reach scale and for reducing risks to both borrowers and firms.

FinRegLab does not view its role to include advocating for specific policy alternatives, but hopes that these analyses may facilitate deeper and more efficient engagement by private stakeholders and policymakers going forward. The goal is a balanced set of market norms and regulatory requirements that allows both borrowers and firms to benefit from cash-flow data.

Collectively, we believe our research and analyses underscore the importance of focused engagement by all stakeholders to address the policy issues raised by cash-flow underwriting, both for its own sake and as a stepping stone to managing evolution in credit markets and data transfer systems more generally. With thoughtful development, cash-flow underwriting has the potential to benefit borrowers and financial services providers alike. It may also inform and help drive the development of a comprehensive framework to facilitate data-driven innovation in financial services.

## 2. POLICY ISSUES

Affected markets are showing both encouraging developments and emerging risks as the use of cash-flow data in credit underwriting picks up momentum. Whether cash-flow underwriting achieves its potential to foster a more inclusive, efficient, and competitive marketplace or evolves in ways that heighten tradeoffs and risks for underserved borrowers will likely depend on how stakeholders respond to several challenging market and policy issues within the next few years.

This section provides a brief overview of FinRegLab's findings regarding (1) the scope and nature of potential benefits of using cash-flow data in credit underwriting; (2) current challenges to reaching scale; (3) potential customer protection concerns; and (4) the potential role that enhanced customer control can play in both realizing the benefits and mitigating the risks of cash-flow underwriting. Section 3 summarizes options for action by industry, regulators, and Congress to improve outcomes both in cash-flow underwriting and the underlying data transfer system.<sup>6</sup>

We have structured the analyses in both sections with an eye toward fostering a marketplace that:

- » Enables choice, competition, and greater access to credit in consumer and small business markets;
- » Encourages responsible innovation, including the development of safe and affordable products and services;
- » Empowers consumers to take greater control in deciding when, where, and how their financial data is used;
- » Aligns incentives for data-acquisitive business models to respect privacy and promotes the security, stability, and reliability of the data transfer system as a whole; and
- » Assigns responsibility for safeguarding data and imposes accountability where such data is misused by authorized parties, exposed in a breach, or rendered inaccurate.

<sup>6</sup> Additional background and more detailed discussions are available in the full report. Section 2 of that document focuses on the traditional credit reporting system, efforts to tap non-traditional information sources, and the origins of FinRegLab's research project. Section 3 summarizes FinRegLab's first two reports, while Section 4 provides detailed market snapshots of the use of cash-flow data in consumer underwriting and the underlying data transfer system. Sections 5-6 and 7 of the third report generally correspond to Sections 2 and 3 of this Overview, respectively.

These principles may also be useful in structuring the transfer of customer-permissioned data in other contexts, even where policy concerns and legal requirements that are specific to credit underwriting do not apply.

## 2.1 Potential benefits for inclusion, efficiency, and competition

A broad range of stakeholders have identified cash-flow data as one of the most promising sources of non-traditional information for credit underwriting, both because it bears directly on applicants' finances and because it is increasingly available in electronic form. Indeed, some stakeholders argue that cash-flow information should not be considered alternative or non-traditional in the first instance because lenders have long relied on such basic inputs as income, expenses, and payment history to evaluate applicants' potential default risk.

Yet in other ways, regularized electronic access to cash-flow data is potentially revolutionary because it facilitates faster, more sophisticated, and more consistent analyses of applicants' overall finances than relying solely on traditional credit information or collecting equivalent data from paper sources. Several aspects of the data are particularly appealing:

- » **Sensitivity and timeliness:** Particularly when it is derived from bank accounts or from small business accounting software, electronic cash-flow data can provide a more detailed and timely view of applicants' overall finances than traditional credit reports and scores. Traditional credit reports typically only reflect payment history for selected types of expenses, while bank account and accounting software data can provide a detailed picture of inflows, outflows, and cushions on an ongoing basis. Recent cash-flow data may be particularly helpful to assessing the extent to which applicants with marred credit have stabilized their finances.
- » **Coverage:** A 2017 survey by the Federal Deposit Insurance Corporation found that 96 percent of American households had at least one checking, savings, or prepaid account, compared with only 80 percent of households that had used at least one "mainstream" credit product that was likely to be reported to traditional credit bureaus in the past year.<sup>7</sup> Similarly, business checking accounts are also cheaper and easier to obtain than commercial credit products, and other types of cash-flow data are becoming more widely available as small businesses' reliance on accounting software, e-commerce platforms, and payment processors has increased.<sup>8</sup>
- » **Specialization:** The third feature that makes electronic cash-flow data particularly useful is that it can help lenders build expertise and tailor credit risk models with regard to particular sub-groups of applicants. For example, small business lenders report that it can be useful to evaluate particular types of companies that local lenders may not have much familiarity with. Similarly, cash-flow data may also be particularly useful in evaluating "gig" economy workers, who by some estimates make up one-third of the nation's workforce.<sup>9</sup>

As detailed in our first report, for the participants for which loan-level data was available, our empirical research found compelling evidence that the cash-flow variables and scores tested were predictive of credit risk and loan performance across the heterogeneous set of providers,

<sup>7</sup> FDIC, 2017 National Survey at 1, 7, 9-12, 18-19, 34-38, 48-58.

<sup>8</sup> FinRegLab, Small Business Spotlight at 12.

<sup>9</sup> Elizabeth Buchwald, The Government Has No Idea How Many Gig Workers There Are, and That's a Problem, MarketWatch (Jan. 7, 2019); Gallup, The Gig Economy and Alternative Work Arrangements 2 (2018).



populations, and products studied. In particular, the cash-flow metrics generally performed as well as traditional credit scores when standing alone, and when combined with traditional credit data frequently improved the ability to predict credit risk among borrowers that were scored by traditional systems as presenting similar risks of default. These results occurred across traditional credit score bands.

In addition, we found evidence that the research participants are serving borrowers who may historically have faced constraints in their ability to access credit, and that the degree to which the cash-flow data was predictive of credit risk appeared to be relatively consistent across different demographic groups. Rather than creating a disparate impact by proxying for race/ethnicity or gender, the data appeared to be providing independent predictive value across all groups.

While additional research is needed to determine the data's value and limitations in modelling credit risk for different products, populations, and economic conditions, our interviews with firms that are piloting or broadly incorporating cash-flow data into their credit scoring and underwriting models are also encouraging. Taken together, these sources suggest that cash-flow data is indeed beginning to expand access to credit, improve lenders' ability to forecast default risk, and enhance competition and innovation in consumer and small business credit markets.

We cannot calculate a numeric estimate of how large these benefits are or could become, but offer several observations with regard to their scope and nature:

**Expanding access to credit:** The most obvious use of cash-flow data in underwriting is to evaluate consumers and businesses that lack sufficient payments history to be scored using traditional credit bureau data. However, our research suggests that the information adds meaningful predictive power for a substantially broader swath of applicants because it provides somewhat different insights than traditional credit files. For example, cash-flow data may be particularly useful in assessing as many as 80 million consumers who often pay higher prices or are rejected outright by lenders because they have scores in the non-prime range, in addition to the roughly 50 million consumers who lack traditional scores.<sup>10</sup> And even for prime customers, cash-flow data might allow lenders to provide faster processing and more tailored offers for credit products.

Cash-flow data could also be particularly important for increasing credit access among African-American and Hispanic applicants, who are substantially more likely than whites to have low or no credit scores. The 2017 FDIC survey found that about 10 to 11 percent of African-American and Hispanic households lacked bank or prepaid accounts, compared to roughly 32 to 36 percent that did not have "mainstream" credit products.<sup>11</sup>

These factors suggest that the inclusion impacts could be substantial, but they do not mean that all "credit invisible" applicants will be approved for loans or that all gaps in credit availability and use will be closed between demographic groups. For example, the use of cash-flow data is less likely to help households that do not have deposit or prepaid accounts because lenders are relying heavily on electronic sources.<sup>12</sup> Differences among different demographic groups with regard to the percentages of households with deposit or transaction accounts, digital access, and attitudes

<sup>10</sup> Consumer Financial Protection Bureau, *The Consumer Credit Card Market 21-23* (2019); CFPB, *Credit Invisibles* at 4-6; Sarah Skidmore Sell, *FICO to Test New Type of Credit Score That May Help Those with Weaker Credit*, *Chicago Times* (Oct. 22, 2018).

<sup>11</sup> FDIC, *2017 National Survey* at 1, 7, 9-12, 18-19, 34-38, 48-58. A CFPB study based on 2010 data for individuals rather than households found that about 27 to 28 percent of African-American and Hispanic adults could not be scored due to insufficient data. CFPB, *Credit Invisibles* at 4-6.

<sup>12</sup> For consumers who do not have bank accounts but do have receipts and other paper records, some lenders are willing to collect such information in person or by smart phone photos. Collecting this information may take additional time and effort, though some companies are providing digitization services to make it easier to combine information pulled from data aggregators, PDF documents, and paper materials. The interactions between lenders and applicants that are needed to collect such information may also have benefits, for instance by engendering a sense of mutual obligation on behalf of consumers. See, e.g., J. Christina Wang, *Technology, the Nature of Information, and FinTech Marketplace Lending*, *Federal Reserve Bank of Boston Current Policy Perspectives* No. 18-3, at 15 (Oct. 2018).

toward privacy could also potentially affect the speed and overall rate at which African-American and Hispanic applicants seek credit from lenders who use cash-flow data for credit underwriting.<sup>13</sup> And for some applicants, cash-flow data may highlight financial challenges that may cause a lender to deny or adjust the terms of credit. Thus, it is important to set reasonable expectations, particularly given that impacts at the individual, group, and market levels may vary and evolve over time.

**Improving risk prediction and lender efficiency:** Improving risk prediction and facilitating more efficient underwriting could have substantial benefits for lenders, for instance by lowering their costs of supplying credit over time, as well as improving portfolio performance and market stability. In addition to improving lenders' ability to manage credit risk, the operational benefits are particularly appealing in the small business market, where there has been less automation historically. However, even for consumer markets, electronic cash-flow data could potentially make it more cost-effective for lenders to underwrite applicants that have historically been expensive to evaluate and to meet demand for smaller loans, as well as potentially reducing the price charged for credit to at least certain segments of customers.

**Enhancing competition and innovation:** The use of cash-flow data in credit underwriting is helping consumers and small businesses gain access to new products, more convenient origination processes, and new providers. For example, some providers are developing products as an alternative to bank overdraft programs or traditional payday loans. Fintech lenders have also used cash-flow data and other technology to increase the speed and convenience of the application process, which has been particularly important in small business markets where underwriting and loan originations have historically been lengthy and paper-intensive. The use of cash-flow data has also attracted new lenders, including not only general fintechs but some mission-driven providers and, in small business markets, companies whose primary business is e-commerce, payment processing, and accounting software.

The ultimate benefits with regard to pricing and product structures remain to be seen as the market evolves; for instance, stakeholders are still assessing the benefits and risks of particular new product structures as experimentation continues. In addition, fintech lenders tend to have higher cost of funds and customer acquisition expenses than banks and credit unions, and their pricing is continuing to evolve as they increase scale, form new business partnerships, and work to improve access to secondary markets. Thus, future benefits from competition and innovation may depend both on whether traditional lenders begin using cash-flow data more widely and whether non-banks can improve the economics of their business models.

## 2.2 Challenges to reaching scale

Consumers and small businesses cannot realize any benefits from cash-flow underwriting if firms do not adopt it in the first instance. Our market research suggests that whether and when cash-flow underwriting can reach scale will depend largely on the extent to which: (1) banks and investors determine that the data is sufficiently useful to warrant changes to their business processes; and (2) lenders of all types can secure reliable access to the data when it is held by other companies.

Although market developments are reducing some operational hurdles, competitive dynamics and coordination challenges are affecting both issues. And open questions with regard to regulatory compliance and liability issues are creating substantial uncertainty in affected markets, some of which cannot be solved without policymakers' assistance.

<sup>13</sup> FDIC, 2017 National Survey at 1, 7, 9-12, 18-19, 34-38, 48-58; Terri Friedline & Zibei Chen, Digital Redlining and the Fintech Marketplace: Evidence from U.S. Zip Codes (2019); Mary Madden, Privacy, Security and Digital Inequality, Data & Society Research Institute 2-10 (2017).

## 2.2.1 Uncertainty among banks and investors

Banks' and investors' willingness to embrace the use of cash-flow underwriting in consumer credit depends both on resolving remaining questions about the data's predictiveness and on their assessments of potential rates of return relative to the operational, financial, and compliance challenges involved in making significant changes to their current business practices. These decisions in turn may impact non-bank firms that have already invested substantial resources in cash-flow underwriting, for instance by affecting opportunities to access secondary markets and to reduce customer acquisition costs through bank partnerships.

A gradual increase in the use of cash-flow data in credit underwriting over the next few years seems more likely than a dramatic jump in scale. The ultimate scope of use may depend on banks' appetite for serving different segments in consumer and small business credit markets.

**Research questions:** The most fundamental questions concern cash-flow models' effectiveness in predicting credit risk across different populations, products, and economic conditions. In addition to FinRegLab's research, information about a pilot of a new consumer credit score that blends traditional credit history with cash-flow data is expected to be released in early 2020.<sup>14</sup> A number of individual banks have also begun piloting the use of cash-flow data, for instance in assessing applications from existing customers or in "second look" programs that evaluate applicants who have been rejected based on traditional criteria.

Given that banks have direct access to the account data of their existing customers, they are relatively well positioned to evaluate remaining research questions about exactly what data is most useful in particular contexts. However, it remains to be seen whether they will launch larger-scale projects until they can determine how models using cash-flow data perform during an economic downturn. Secondary market participants similarly report that they are reluctant to place substantial weight on cash-flow variables until they are tested in an economic downturn, particularly given that the market has not yet developed standardized benchmarks for evaluating the data. Nevertheless, even if large-scale adoption is not immediate, additional testing and pilot projects could be useful to better understand performance as economic conditions change over time.

**Business and compliance considerations:** Further expansion of the use of cash-flow data will also depend on firms' calculation of the rate of return relative to the costs of implementation and ongoing operations in particular product markets. Operational hurdles for banks can be significant—particularly for smaller institutions that may have a difficult time developing in-house programs and technologies—but are likely to improve going forward given opportunities to partner with fintech companies that are already working with cash-flow data, purchase consumer credit scores and supplemental credit reports that reflect cash-flow information, and other market developments.

Uncertainty about compliance issues could also influence banks' decisions about cash-flow adoption, although the outlook on that issue has also improved. Banks that are considering changes to their underwriting systems must account for multiple requirements under federal consumer financial law, as well as meeting federal banking agencies' expectations regarding model governance and

<sup>14</sup> The credit score is one of several cash-flow related initiatives by incumbents in the traditional credit reporting and scoring markets such as FICO, Experian, and Equifax, working with aggregators Finicity and Envestnet/Yodlee. Matt Tatham, Blog, More Than 1 Million Americans Have Improved Their FICO® Scores with Experian Boost, [experian.com](https://www.experian.com) (Dec. 13, 2019); FICO, Introducing the Ultra-FICO Score, [fico.com](https://www.fico.com) (visited Feb. 8, 2020); Equifax, Equifax Enters into Credit Bureau-Exclusive Relationship with Envestnet/Yodlee to Further Extend Alternative Data Leadership, [equifax.com](https://www.equifax.com) (Nov. 7, 2019).

monitoring any vendors that participate in the underwriting process.<sup>15</sup> To the extent that banks and credit unions are concerned that they may face a high burden of proof in using cash-flow data for credit underwriting, the December 2019 interagency statement is encouraging because it specifically notes that cash-flow data may present no greater risk than traditional information sources when used to assess borrowers' capacity to repay a new loan. However, the statement also emphasizes the importance of a robust compliance program and does not provide any specific substantive guidance on various compliance or interpretive questions with regard to either cash-flow underwriting or the underlying data flows that are discussed further below.<sup>16</sup>

Ultimately, the largest question for banks may be the rate of return and their broader appetite for serving different market segments. Although some banks that pulled back from small business lending markets after the 2008 financial crisis have since made substantial efforts to return, many banks have continued their retrenchment from non-prime consumer lending over the last decade. Non-prime loans can have a lower rate of return than other business lines because they are smaller in size, relatively expensive to originate, and typically have higher default rates; although banks use "risk-based pricing" models to account for some of these factors, they generally are reluctant to go beyond certain pricing ranges. The returns from non-prime lending are also more volatile at different points in the business cycle relative to other business lines. Some stakeholders have suggested that post-crisis changes to capital and stress-testing requirements and/or more generalized aversion to volatility have tended to discourage banks from lending to riskier borrowers.

**The December 2019 interagency statement is encouraging because it specifically notes that cash-flow data may present no greater risk than traditional information sources.**

But there are important implications for banks' long-term business models to the extent that they continue to cede ground to fintech lenders, which now supply approximately 40 percent of the rapidly growing market for unsecured personal loans.<sup>17</sup> Even if banks do not view non-prime customers as a core constituency, fintech lenders are not limiting themselves to that market, especially as they look to expand product offerings to current and new customer bases. To the extent that banks view transactional data about their deposit customers as a core asset, the best means of preserving that franchise may be to operationalize that information for a broader range of those customers, particularly if electronic cash-flow data allows banks to provide credit in a more cost-effective way than traditional data.

### 2.2.2 Securing reliable data access

The second issue that will determine whether and when cash-flow underwriting can reach scale is the ability of all types of firms to secure reliable access to the underlying data. Data aggregators have become the hub of a new data transfer system that is not only supporting cash-flow underwriting, but a growing range of other "use cases" such as fintech payment services, personal financial management services, and account verification for other purposes. Yet while this system now reportedly covers 95 percent of U.S. deposit accounts, competitive and coordination issues are complicating the process by which the market is adopting safer and more efficient technologies

<sup>15</sup> Consumer compliance requirements include conducting fair lending analyses, creating systems to generate individualized explanations of application denials and other "adverse actions," and ensuring that lenders' communications and practices do not violate prohibitions on unfair, deceptive, or abusive activity. Banks are periodically examined by federal regulators for both consumer compliance and safety and soundness risk, but most non-bank lenders are not.

<sup>16</sup> Interagency Alternative Data Statement at 2-3.

<sup>17</sup> TransUnion, Press Release, FinTechs Continue to Drive Personal Loan Growth, [transunion.com](https://www.transunion.com/press-releases/fin-techs-continue-to-drive-personal-loan-growth) (Feb. 21, 2019); Experian, Fintech vs. Traditional FIs: Trends in Unsecured Personal Installment Loans 3 (2019).

## OVERVIEW OF TRANSFER TECHNOLOGIES

Data transfer technologies are in a state of flux, moving from credential sharing and screen scraping toward tokenized access and application programming interfaces.

**Credential sharing vs tokenized access:** Credential sharing gives an aggregator or other party the practical ability to interact with the bank portal as if they were the account holder, including accessing all information that would be visible to the customer and the ability to conduct transactions on the accounts. Access can only be cut off if the customer changes their login credentials going forward.

An alternative is to create a system that generates specialized data access tokens. Tokenization involves replacing a sensitive data element with a randomly generated set of values that have no other meaning or value. Depending on how systems are constructed, access tokens could for instance limit users to read-

only access without the ability to conduct account transactions. They can also be limited for use during particular time periods and by particular parties, and if combined with APIs can be used to provide access only to specified sets of data.

**Screen scraping vs APIs:** Screen scraping is disliked by many stakeholders because it can burden banks' systems and make it more difficult to detect security attacks, and because accuracy and access can be reduced whenever banks change their systems. APIs are software-based communication protocols or functions between websites or applications, allowing them to exchange information and data using a common format. They provide more efficient, secure, and accurate data transfers, and they allow tailoring of the amount of data provided for different users. APIs also make it easier for banks to create dashboards that give transparency to customers about outbound data flows.

for data transfers. And open questions about regulatory compliance and liability issues are further complicating interactions among system participants.

**Scope and method of access:** The method of data access that is used for the vast majority of data transfers today requires credit applicants to share their login credentials to their banks' online portals so that aggregators can use them to collect data through a process called screen scraping. But credential sharing and screen scraping have substantial disadvantages with regard to security, privacy, accuracy, and general reliability. Accordingly, larger banks have begun pushing to transition to systems that rely on specially generated tokens for data access and on "application programming interfaces" (APIs) to effectuate transfers of narrower slices of data.

These initiatives are being implemented through confidential bilateral agreements negotiated between individual banks and aggregators. As a result, there are substantial questions about scale, consistency, and how competitive dynamics are shaping the contract terms. For instance, aggregators, lenders, and other fintech "end users" assert that banks are unduly constraining the scope of data access and imposing excessive requirements concerning information security and liability on downstream parties. The banks argue that they have a duty to protect customers' privacy and security and their own safety and soundness, particularly because regulators and customers may expect them to make customers whole in the event of a downstream breach or other misuse of data. Accordingly, they argue that the data sharing agreements are imposing some discipline on the broader data transfer system in the absence of greater regulatory clarity and consistency.

Assessing the conflicting claims is difficult given that the agreements are confidential, but it is clear that using bilateral contracts to effectuate the technology improvements and police the broader system has multiple disadvantages. Where each bank has its own bespoke technology and security requirements, negotiations and implementation become more complex for aggregators and end users. And the data sharing agreements simply do not reach all transfers in the market, since they are largely confined to the largest institutions. Smaller banks, which rely heavily on certain vendors to operate their core deposit platforms, face particular challenges in negotiating data



sharing agreements and implementing new transfer technologies. And stakeholders from across the spectrum agree that insurance availability is a substantial constraint on managing liability concerns.

**Market tensions over standardization:** In light of the inefficiencies of relying on bilateral agreements, recent industry initiatives under the umbrella of the Financial Data Exchange (FDX) have been attempting to accelerate movement to a standardized API and definitions for what data fields should be transmitted for credit underwriting or other particular use cases. The organization includes large banks, aggregators, a trade association and the largest deposit platform vendor that works with small banks, and various other firms. It is also seeking input from consumer advocates, which participate in working groups but do not have voting power at the board level.

However, FDX efforts to define the minimum data elements to be provided for particular use cases are still under discussion, and acquisitions and other developments in late 2019 and early 2020 have increased uncertainty and tension among transfer system participants. For example, two large banks have taken action to cut off screen scraping activities by one or more aggregators, and The Clearing House banking association issued a model data sharing agreement that raised concerns among aggregators and fintechs over language permitting banks both to block data transfers in certain circumstances and to charge for data access.<sup>18</sup> After the new year, Visa announced that it was purchasing data aggregator Plaid for \$5.3 billion, sparking both hopes that the payments network could help facilitate better relations, technological adoption, and liability resolution in the broader data transfer system and fears that aggregation services would become more expensive and difficult to obtain for fintechs.<sup>19</sup> Somewhat similarly, Fidelity announced that it was spinning off its Akoya data sharing subsidiary to become an independent company owned jointly by Fidelity and 11 banks that are members of The Clearing House, raising both hopes that the new venture could help facilitate data sharing activities by smaller firms for which bilateral agreements may be impractical and fears that it would be used by participating institutions to exercise greater control over the scope of data flows going forward.<sup>20</sup>

These developments have raised substantial questions about which groups of stakeholders will exert the most influence over industry standardization efforts going forward and how particular decisions will be made. An alternative path would be for the Consumer Financial Protection Bureau to define the scope of data access under § 1033 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, which provides consumers with a right to access account and transaction data in connection with consumer financial products and services.<sup>21</sup> However, while the law statute specifically directs the CFPB to “prescribe standards applicable to covered persons to promote the development and use of standardized formats for information, including through the use of machine readable

<sup>18</sup> Pete Schroeder & Anna Irrera, JPMorgan Sets July Deadline for Fintechs to Sign New Data Access Deals: Sources, Reuters (Feb. 13, 2020); Penny Crosman, Is a New Data War about to Erupt?, Am. Banker (Dec. 23, 2019); The Clearing House, Template for U.S. Accounts Data Sharing Agreement articles 4, 10 (Nov. 12, 2019). The Clearing House is owned by two dozen of the nation's largest banks.

<sup>19</sup> Julie Verhage & Tom Metcalf, Plaid's Founders Are Latest Fintech Royalty with Visa Deal, Bloomberg (Jan. 14, 2020); Cara Lombardo & AnnaMaria Andriotis, Visa to Pay \$5.3 Billion for Fintech Startup, Wall St. J. (Jan. 13, 2020); John Adams, Visa's \$5 Billion Plaid Deal Takes a Possible Rival Off the Table, Am. Banker (Jan. 13, 2020).

<sup>20</sup> Penny Crosman, Fidelity's Data-Sharing Unit Akoya to Be Jointly Owned with the Clearing House, 11 Banks, Am. Banker (Feb. 20, 2020); PYMNTS, Fidelity Teams with TCH to Launch Personal Data Startup, [pymnts.com](https://pymnts.com) (Jan. 20, 2020); Justin Baer, Fidelity's Parent Company Is Spinning Out Its Akoya Personal-Data Startup, Wall St. J. (Feb. 20, 2020); Larry Edelman, Fidelity Spins Off Business That Helps Consumers Control Financial Data, Boston Globe (Feb. 20, 2020). TCH also has a seat on the organization's board. A third acquisition involves Intuit's purchase of Credit Karma, which provides access to credit scores, tax filing, and other financial management services to consumers. Nathaniel Popper & Michael J. de la Merced, Dealbook, Intuit to Buy Credit Karma to Create Financial Data Giant, N.Y. Times (Feb. 24, 2020). Intuit acts as a data aggregator but only for companies that it owns, such as Turbo Tax and Mint.

<sup>21</sup> 12 U.S.C. § 5533. The Dodd-Frank Act defines consumer generally to include agents and representatives who act on behalf of individuals. *Id.* § 5481(4).

files,” other language suggests that Congress did not intend for the Bureau to prescribe the use of specific technologies.<sup>22</sup>

These considerations may suggest that a hybrid approach could be advantageous. Under such an approach, the CFPB could use a rulemaking process to engage all stakeholders in defining the general scope of data to which § 1033 of the Dodd-Frank Act provides access, the conditions under which agents and representatives can access information on consumers’ behalf, procedures for customer authorizations and disclosures, and a staged implementation process to account for the challenges facing smaller financial services providers. Industry in turn could focus on defining technology standards and tools to effectuate such transfers efficiently and securely.

**Broader security, compliance, and liability concerns:** A hybrid approach involving initiatives by both regulators and industry may also be helpful in resolving broader concerns about information security, regulatory compliance, and liability in the new data transfer system.

Many of these concerns are fueled by regulatory issues that can only be settled by policymakers. For example, non-bank financial institutions are currently subject to less detailed information security requirements under the Gramm-Leach-Bliley Act than banks. The Federal Trade Commission is engaged in a rulemaking that would narrow many of those differences, though it lacks authority to subject non-banks to regular compliance examinations.<sup>23</sup> Stakeholders also point to continuing uncertainty with regard to consumer and institutional liability under the Electronic Fund Transfer Act, for instance in situations where credentials are used to conduct account transactions that the consumer did not authorize,<sup>24</sup> and whether and when banks have an obligation to conduct oversight over aggregators as third party service providers.<sup>25</sup>

At the same time, stakeholders argue that industry initiatives could also play an important role in reducing coordination challenges. For instance, some stakeholders suggest that working to standardize tokenization schemes for data access and/or for certain payments-related information that could be used to conduct unauthorized transactions on customers’ accounts would reduce tensions over security and liability. Others emphasize that developing better traceability mechanisms would facilitate investigations in the event of data breaches. And many stakeholders point more broadly to the payments industry, which has developed common data security standards, standardized contract warranties, and other mechanisms to help manage business-to-business liability issues that are not settled by federal regulation. Although there is no umbrella entity in the data transfer system that plays quite the same role as card networks or clearinghouse associations do in various payments systems, stakeholders suggest that those markets demonstrate the potential for industry-developed standards and coordination mechanisms for customer-permissioned data flows.

<sup>22</sup> *Id.* § 5533(d), (e)(3) (directing the Bureau to consult with other agencies to “ensure, to the extent appropriate, that [its] rules ... do not require or promote the use of any particular technology in order to develop systems for compliance”).

<sup>23</sup> 12 U.S.C. §§ 6801-6809; 16 C.F.R. Pt. 314; 84 Fed. Reg. 13158 (Apr. 4, 2019). Federal banking regulators do have authority to examine vendors to banks for GLBA information security compliance, though only within the scope of those vendor services.

<sup>24</sup> 15 U.S.C. § 1693g; 12 C.F.R. §§ 1005.2(a)(1), (m), 1005.6(b); *id.* Supp. 1, cmt. 2(m)-2, 6(b)(3)-2. Some stakeholders have also expressed concern that routing and account number information could be misused to conduct unauthorized transactions, although that issue is not unique to the data transfer context. Additional issues under EFTA have been raised with regard to certain payments-related use cases regarding whether aggregators and/or fintechs may be liable to consumers as electronic fund transfer service providers under 12 C.F.R. § 1005.14.

<sup>25</sup> 12 U.S.C. §§ 1867, 5514(e), 5515(d), 5516(e). In the credit context specifically, there are also questions about potential application of the Fair Credit Reporting Act. However, the debates are primarily focused on whether FCRA requirements for consumer reporting agencies and users of consumer reports apply to aggregators and lenders, respectively. As discussed in the full report, we are not aware of any stakeholders that are actively pressing to treat banks and prepaid issuers as “furnishers” under FCRA or that are pressing to apply FCRA to data transfers for use cases that do not involve credit.

## 2.3 Emerging risks for consumers and small businesses

While the increasing use of cash-flow data in credit underwriting is providing benefits for consumers and small businesses, it also presents privacy tradeoffs and potential concerns about fairness, accuracy, data security, and transparency. These issues are not limited to loan origination, but also can arise where lenders pull and review additional cash-flow data during servicing and collections, and to the extent that lenders, aggregators, or other vendors re-use cash-flow data for other commercial purposes.

These customer protection issues may be more complicated for credit-related activities than for other use cases that rely upon cash-flow data, given the amount of historical data that may be useful for credit underwriting, the consequences of credit decisions for both borrowers and lenders, and other factors. Many of these issues are present with the use of traditional data sources for credit as well, but both the nature of the cash-flow information and the processes by which it is transferred can present additional considerations of which applicants may not be aware.

Although some positive market developments are occurring to mitigate some of these risks, uncertainty about the application of existing laws and inconsistency among market actors could become an increasing concern as the market continues to expand and evolve. At the very least, failing to resolve these issues could make some applicants less likely to authorize the use of their data despite its potential benefits. At the very worst, some stakeholders fear that credit markets could evolve in ways that increase privacy tradeoffs and risks for underserved borrowers, with few practical alternatives in the marketplace or protections against aggressive lender practices.

But stakeholders are deeply divided over whether policymakers should take action on particular issues prior to the manifestation of concrete problems in the market, as well as how best to mitigate particular risks. For example, stakeholders disagree about the extent to which borrowers could protect their interests if they were able to exercise more control over their own data. While stakeholders generally agree on the need to strengthen disclosures, authorization procedures, and other tools for customers to control the use and sharing of their data, they are deeply divided over whether such control mechanisms could substitute for traditional protections or whether stronger prescriptive safeguards are also needed as the volume of data sharing increases rapidly across financial services markets.

Because these debates are complex and interlocking, Section 2.3 outlines potential customer protection concerns during the initial loan application process, in loan monitoring and collections, and in connection with firms' downstream re-use of cash-flow data for other purposes, respectively. Section 2.4 analyzes the cross-cutting debates about using customer control and customer protection mechanisms both to mitigate the risks and realize the benefits of cash-flow underwriting.

### 2.3.1 Initial credit decisioning

The rich detail that cash-flow data provides about how consumers and small businesses manage their finances increases both its predictive power and its potential privacy and fairness risks. Particularly where the data must be transferred between multiple companies to facilitate the underwriting process, accuracy and information security can be additional concerns. A final issue is whether consumers and small businesses have sufficient information to weigh the benefits, risks, and tradeoffs of both cash-flow underwriting and the related data transfers.

*The rich detail that cash-flow data provides about how consumers and small businesses manage their finances both provides its predictive power and increases its potential privacy and fairness risks.*



**Privacy and fairness:** To date, lenders and model developers appear to be focusing on financial variables that reveal overall patterns in income, expenses, and reserves and in how applicants manage their finances over time. But as the market evolves, there could be stronger interest in using transaction details that are less closely tied to core financial metrics to forecast credit risk. While there are open factual questions as to the predictiveness of such data, such developments if they occur could raise issues similar to those encountered by the credit card industry in the late 2000s over the use of so-called “behavioral models” that adjusted consumers’ credit terms based on such factors as where they shopped and what types of purchases they made with their cards.

Existing law already restricts use of certain information in credit underwriting, including not only the borrower’s race, ethnicity, gender, and membership in certain other protected classes, but also medical information and in certain circumstances variables that are proxies for protected class status.<sup>26</sup> But a 2008 credit card case in which the lender reduced credit limits for consumers who used their cards for marital counseling, tire retreading and car repairs, and pawn shops helps to illustrate broader potential questions that could arise about what information is appropriate for lenders to use in underwriting decisions and what borrowers need to know to make informed decisions in applying for credit and using their accounts over time.<sup>27</sup> More research to determine exactly what data is most valuable for predicting default risk for particular products and populations would help to inform policy analyses on these issues.

**Accuracy and security issues:** Particularly where data must transfer between companies, accuracy and security are additional concerns. Stakeholders generally agree that cash-flow data as it is maintained by banks and prepaid issuers tends to have fewer accuracy problems than traditional credit reports, though statistics are difficult to obtain. And where the data must be transferred between companies to facilitate the underwriting process, additional errors can be introduced in the collection and processing of the information, particularly where screen scraping is used. The Fair Credit Reporting Act provides extensive accuracy protections including mechanisms for correcting errors in “consumer reports” with both the original sources of the information and the “consumer reporting agencies” that compile it for transmission to lenders, but stakeholders fiercely dispute whether and how FCRA requirements apply to the system for customer-permissioned data transfers.<sup>28</sup>

As discussed in Section 2.2.2, information security concerns for data transfers are heightened by the fact that non-bank actors are not subject to as detailed information security requirements or related compliance monitoring as banks under the Gramm-Leach-Bliley Act, as well as by the reliance on sharing login credentials.<sup>29</sup> Although the Electronic Fund Transfer Act generally limits consumers’ liability for unauthorized electronic funds transfers from their bank and prepaid accounts, some banks have argued that those protections do not apply where consumers’ credentials are misused after they were shared with another financial services provider.<sup>30</sup>

**Transparency:** Finally, concerns about transparency regarding the scope of data use and sharing and about informed consent are interwoven with many of the issues outlined above. Current disclosure and marketing practices vary, and there are no federal standards for application-stage disclosures regarding what data is used in credit underwriting or related data transfers. Accordingly, it is not clear whether consumers and small businesses are currently well positioned to evaluate

<sup>26</sup> 15 U.S.C. §§ 1681a, 1681b(g), 1681c(a)(6), 1691(a); 42 U.S.C. § 3605; 12 C.F.R. §§ 1002.6, 1022.30-.32; 24 C.F.R. § 100.120.

<sup>27</sup> Federal Trade Commission, Complaint for Permanent Injunction and Other Equitable Relief, *FTC v. CompuCredit Corp.*, No. 1:08-cv-1976-BBM-RGV (N.D. Ga. June 10, 2008); Board of Governors of the Federal Reserve System, Report to the Congress on Reductions of Consumer Credit Limits Based on Certain Information as to Experience or Transactions of the Consumer (2010).

<sup>28</sup> 15 U.S.C. §§ 1861e, 1861g, 1861h, 1861i, 1861m, 1861s-2(a), (b), (e); 12 C.F.R. §§ 1022.40-43, 1022.70-.75, 1022.130, 1022.136-38.

<sup>29</sup> 12 U.S.C. §§ 6801-6809; 12 C.F.R. Pt. 1016; 16 C.F.R. Pt. 314.

<sup>30</sup> 15 U.S.C. § 1693g; 12 C.F.R. § 1005.6; Liz Weston, *Why Banks Want You to Drop Mint, Other ‘Aggregators,’* Reuters (Nov. 9, 2015).

either the potential benefits of cash-flow underwriting or potential tradeoffs and risks. There are also ambiguities as to what information consumers should receive in the event that lenders reject their application or charge them higher rates based on cash-flow information, which may make it more difficult for applicants to pursue any corrections in the underlying data.

### 2.3.2 Loan monitoring and servicing

Privacy, fairness, and other customer protection concerns can also arise where lenders collect and review supplemental cash-flow data during loan servicing and collections. In some cases, such reviews can be highly beneficial to borrowers, for instance by facilitating additional loan extensions, ongoing access to credit cards and lines of credit, and early assistance for struggling borrowers. But depending on the frequency and purpose of the reviews, there is also a risk that they could unduly intrude on borrowers' privacy or be used to take advantage of delinquent borrowers during a collections process.

Current industry practices with regard to pulling data after origination vary widely depending on such factors as product type, individual lender policies, and borrower behavior. For example, some products that are designed as alternatives to checking overdraft services involve ongoing account monitoring to determine when consumers may need advances, and periodic reviews are standard for credit cards and other open-end credit products. In contrast, additional reviews in connection with installment loans may occur only upon customer delinquency. The frequency of data pulls is often discussed in lenders' terms and conditions, but there is growing evidence that consumers and small businesses rarely read those documents in the course of the credit application process.

To the extent that supplemental cash-flow data is used to make decisions about loan extensions or adjustments in credit terms, the risks to customers are similar to those discussed above with regard to initial underwriting. However, there are also broader questions about whether it is appropriate for lenders to condition the extension of credit on the ability to collect and monitor cash-flow information over time, even in situations in which the nature of the product does not require updates and the lender is not contemplating taking some specific action with regard to the loan. A second, related question focuses on how lenders use cash-flow data in dealing with borrowers who are in financial distress.

These issues underscore that cash-flow underwriting may not just involve a one-time review of limited account information to facilitate decisions regarding access to credit, but an ongoing relationship in which data collection and review may occur multiple times and in situations in which the lender's and borrower's interests may be in more tension with each other.

Additional quantitative and market research would be helpful to assess the potential benefits and risks of using cash-flow data in loan servicing and collections processes, as well as to identify best practices. Some stakeholders argue that privacy concerns can be managed through robust disclosures and authorization processes, but past history with other servicing and collections issues suggests that consumers tend not to focus substantial attention on lenders' downstream practices when applying for credit. Some stakeholders have suggested that debt collectors should not be permitted to rely on lenders' original authorization to access cash-flow information during a collections process, but rather be required to obtain separate affirmative permission before accessing account data.

### 2.3.3 Downstream re-use and transfers of cash-flow data

A final set of customer protection concerns focuses on the circumstances under which lenders, aggregators, or vendors can re-use cash-flow data that was obtained initially for credit purposes to support their own downstream business activities, such as refining underwriting models, developing new products, providing analytical services to other clients, or marketing other products or services to the customer. Particularly because of the richness of cash-flow information, the broader the latitude to re-use and transfer customer data for other purposes, the larger the incentives for firms to collect and retain more data than they may need for credit activities.

Existing federal laws restrict re-use and downstream data sharing for certain types of financial data in some circumstances, particularly in connection with third-party marketing to consumers.<sup>31</sup> However, these laws provide fairly wide latitude for other activities, including re-use of data that has been anonymized by stripping out certain identifying information.<sup>32</sup> These provisions have been critical to innovation in U.S. financial services markets because they provide an avenue for lenders, model developers, and other financial services providers to access data to refine underwriting models and develop new products and services more generally.

However, re-use activities are attracting increasing concern from some stakeholders, particularly where they involve sharing between multiple companies. Critics have raised concerns that the scope of data use and sharing may not conform to customer expectations and may make it difficult for customers to monitor their privacy and security risks over time as data is passed downstream to additional parties. Some sources are also raising increasing concerns about the risk of reidentification of anonymized data as digital information and analytical tools spread much more widely across more firms. While more sophisticated anonymization techniques and privacy enhancing technologies can be helpful, some jurisdictions are beginning to adopt additional regulatory safeguards for retention, handling, and subsequent transfers of anonymized data.<sup>33</sup>

These concerns are not unique to the cash-flow underwriting context, although they are attracting significant attention there due to activities by one aggregator that have drawn criticism by privacy researchers and calls for investigations by members of Congress.<sup>34</sup> Some stakeholders view sales of anonymized data as particularly problematic in the system for customer-permissioned data transfers because they believe it is particularly difficult to explain the benefits and risks to customers, because such sales could change incentives with regard to data collection practices, and because the sales could shift pricing within the industry to the extent that some aggregators resell data and others do not. Others argue that access to anonymized data is important to fueling innovation in financial services broadly and that any regulatory changes regarding the issue should be addressed on a broader sectoral basis rather than just for the customer-permissioned transfer system.

<sup>31</sup> For example, the Fair Credit Reporting Act only permits consumer reports to be obtained and used for certain defined permissible purposes. 15 U.S.C. § 1681b. The Gramm-Leach-Bliley Act also restricts financial institutions from sharing consumer data with third parties, for instance by requiring notice and the opportunity to opt out of sharing for certain marketing and other purposes. It applies to both banks and non-banks that engage in various “financial activities” as defined by federal law. *Id.* §§ 6801-6809.

<sup>32</sup> 15 U.S.C. §§ 1681b, 6802-6803; 12 C.F.R. §§ 1016.3(q)(2)(ii)(B), 1016.10-15; Federal Trade Commission, 40 Years of Experience with the Fair Credit Reporting Act: An FTC Staff Report with Summary of Interpretations at 11, § 603(d)(1)-5, § 604(a)(2)-1 & -2, § 604(a)-6 (2011).

<sup>33</sup> See, e.g., Cal. Civ. Code §§ 1798.140(a), (h), (o), (r), 1798.145(a)(5).

<sup>34</sup> Joseph Cox, Leaked Document Shows How Big Companies Buy Credit Card Data on Millions of Americans, *Vice* (Feb. 19, 2020); Sen. Ron Wyden et al., Letter to Joseph J. Simons (Jan. 17, 2020).

## 2.4. Enhancing customer control to leverage benefits and mitigate risks

As stakeholders debate the various policy issues discussed above about cash-flow underwriting, questions arise repeatedly about the extent to which particular concerns can be managed by enhancing consumers and small business owners' ability to control their data. The fact that credit applicants must generally authorize access to their transaction account records is one of the biggest distinctions between cash-flow data and traditional credit reports,<sup>35</sup> and many stakeholders view enhanced customer control as (1) a key to effectuating the potential benefits described in Sections 2.1 and 2.2; (2) a means of managing various tradeoffs and risks discussed in Section 2.3; and (3) an opportunity to empower consumers and small businesses more generally to take greater control over their financial lives.

Drawing on data laws in other jurisdictions and principles for data sharing that have been issued by various organizations and agencies in the U.S., stakeholders have suggested that an enhanced customer control regime could have multiple elements:

- » Clear and effective communications prior to and during the application process about use of the data in underwriting, servicing, and other contexts, in addition to information about the data transfer process where relevant;
- » Efficient processes for memorializing applicants' authorizations regarding data access and use, as well as for communicating them to downstream parties;
- » Mechanisms for applicants to review their data in order to confirm the scope of the transmission and screen for accuracy concerns; and
- » Downstream processes to enable borrowers to manage their data over the course of the credit relationship, such as mechanisms to monitor ongoing use and sharing, the potential ability to modify or revoke access and compel deletion, and dispute resolution channels.

Yet while a broad range of stakeholders support enhancing customer control mechanisms at a high level, they have varying views with regard to the details of particular features, prioritization among different elements, and the overall likelihood of success in creating robust data control rights. They are also deeply divided over the balance between customer control, customer protection, and other potential policy objectives.

**Implementation challenges:** Various market actors are working to develop prototypes for improved consent and control mechanisms. For instance, the Financial Data Exchange has begun working with individual members to begin testing authorization disclosures and protocols, and a growing number of banks and aggregators are providing dashboards that allow consumers and small businesses to monitor the authorizations they have previously granted and to modify or terminate them over time.

Yet market-wide adoption of the elements listed above would require overcoming a range of communications, business process, and technological challenges, as well as resolving certain policy considerations. For instance, providing effective disclosures about all of the policy issues discussed above is challenging, particularly to consumers and small businesses that apply via smart phones and mobile devices. There is growing evidence that most customers do not read data disclosures, though stakeholders are divided as to how much of that fact is due to poor design, overly legalistic wording, and other execution flaws. There also could be business process impacts to the extent that

<sup>35</sup> The Fair Credit Reporting Act does not require customer permission before lenders access consumer reports for credit underwriting purposes. 15 U.S.C. § 1681b(a)(3)(A).

the application process is substantially lengthened, given that online lenders report that adding “clicks” to origination processes tends to increase the number of abandoned applications.

Giving customers the ability to monitor ongoing data sharing, change the scope of access, and compel deletion also raises potential logistical issues, in addition to the policy issues discussed above with regard to lenders’ potentially conditioning the extension of credit on continuing access to account data. For example, creating dashboards could be technically challenging for smaller market players, and communications between different actors would be needed to provide transparency as data flows between different companies and to convey customer instructions downstream. Indeed, no one firm acting alone may be able to provide the kind of robust control regime that many stakeholders envision.

**Broader debates:** In light of these implementation challenges and other considerations, stakeholders are also deeply divided about the role that control should play in the marketplace. Some argue that enhanced control mechanisms should suffice to allow consumers to manage privacy tradeoffs and even accuracy concerns without the need for traditional prescriptive protections that would increase compliance burdens or restrict flexibility for further innovation.

Other stakeholders point to evidence that consumers and small businesses are already feeling overwhelmed by data privacy and security issues, and argue that placing the burden on applicants to manage all of the potential risks and tradeoffs discussed in Section 2.3 would be impractical and ineffective. They advocate for adopting additional prescriptive protections to obviate the need for

certain customer choices as the volume of data sharing increases, for instance by imposing tighter restrictions on downstream use. Others have questioned whether customer data rights might need to be calibrated in particular circumstances to account for other policy concerns, for instance to ensure that lenders do not get a distorted picture of applicants’ finances, to facilitate lenders’ ability to work with borrowers who may be experiencing financial difficulties, or to make it easier for lenders to build predictive models for all populations.

These considerations demonstrate why developing effective ways to strengthen customer control and deciding how to balance empowerment efforts with other policy objectives are some of the most complex and far-reaching policy questions raised by cash-flow underwriting and customer-permissioned data flows more generally. While current industry initiatives are encouraging and helpful, complementary action by policymakers will likely be required to develop a consistent set of tools and expectations. Indeed, even some stakeholders who advocate for using customer control mechanisms in lieu of prescriptive protections agree that some regulatory action may be needed to effectuate a more robust control regime in the first instance.

*Developing effective ways to strengthen customer control and deciding how to balance empowerment efforts with other policy objectives are some of the most complex and far-reaching policy questions raised by cash-flow underwriting and customer-permissioned data flows more generally.*

## 3. OPTIONS FOR ACTION

The complex and interlocking nature of the policy issues presented by cash-flow underwriting will likely require sustained engagement by private stakeholders, regulators, and Congress to resolve. Although it may be tempting for each group to wait for action by some other party, there could be substantial opportunity costs to inaction with regard to efficiency, competitive dynamics, access to credit, and customer protection. Greater engagement by regulators in the near term could be particularly important to helping make industry and Congressional initiatives more effective and more likely to succeed.

As discussed in the full report, there are some signs that cash-flow underwriting and in particular the new data transfer system are reaching the stage at which some level of consistency concerning the scope of data, transfer technologies, and business practices could fuel greater efficiency and better risk mitigation for borrowers.

Yet while market actors are already working to address some of these issues, there are limits to what they can accomplish alone. Market-led standards can be complicated by competitive dynamics and frustrated by the lack of effective accountability mechanisms. And given outstanding questions about the application of existing laws and guidance, increasing the certainty and consistency of legal frameworks could help both firms and borrowers be more confident in structuring their own activities. Thus, while policymakers are often reluctant to intervene too early with regard to emerging innovations for fear of chilling the market, the policy issues discussed in Section 2 help to highlight the fact that a lack of standards and regulatory clarity can have important implications for scaling innovation and for market structure.

This section explores some of the sequencing and strategic issues faced respectively by industry, regulators, and Congress in addressing critical policy challenges concerning cash-flow underwriting and related data transfers. Given the challenges facing each group and the complex and interlocking nature of the policy issues presented, the section concludes that it may be particularly important for regulators to begin ramping up their level of engagement in the near term.

### 3.1 Industry actions

As discussed above, industry actors have a critical role to play in answering remaining research questions about the usefulness and limitations of particular cash-flow data in credit underwriting and servicing. To the extent that this research is made publicly available, it can help to shape the



ways in which secondary market investors, regulators, advocates, and borrowers respond to market evolution and to various policy issues discussed above.

The second major need is for the development and implementation of best practices, voluntary standards, and consistent technologies for data use, sharing, and protection. For example, various groups of stakeholders are calling for greater standardization on the following topics:

- » Consistent standards for data transmission technologies between firms in order to reduce technology and coordination costs and mitigate accuracy, information security and other disadvantages and risks of credential sharing and screen scraping.
- » Consistent standards for the scope of data transferred for credit underwriting and/or other use cases, as well as for technical formatting. Depending on the decisions made, such standardization could be used not just to increase transmission efficiency but to balance privacy and predictiveness concerns.
- » Consistent information security expectations for aggregators and end users, as well as better business-to-business mechanisms for investigations, liability resolution, and other matters in connection with misuse of credentials and/or data breaches in order to provide greater certainty to all market actors and reduce investigation and coordination costs.
- » Best practices for creating and handling of anonymized data.

Where such voluntary measures can lower coordination costs, reduce the risk of unexpected and potentially catastrophic liability, and minimize the need for regulatory intervention, there may be strong market incentives to support adoption. As discussed above, there is a particular interest among some stakeholders in expanding the focus of current cross-industry discussions to concentrate more attention on such issues as tokenization, industry-wide data security standards, traceability, and other business-to-business mechanisms for managing liability issues, similar to what has evolved in the payments industry over time.

At the same time, the history of self-governance efforts in the traditional credit reporting system helps to illustrate that adoption of voluntary industry standards on certain topics can be substantially complicated by competitive interests and difficulties in coordinating consistent compliance across companies. And while many of the firms that have pioneered use of cash-flow data in credit underwriting and data transfers more generally have defined their missions with a relatively strong focus on inclusion, they may have few levers with which to ensure that later market entrants conform to similar practices and standards for data use, sharing, and protection.

One of the most challenging issues for industry to solve for itself in the cash-flow underwriting context concerns questions about the scope of data access. The concept of “data minimization” generally holds that firms should only collect what information is reasonably necessary to provide the products that customers have contracted for, use the information in ways that customers would reasonably expect, and dispose of the information as quickly as practicable in light of record retention requirements and other considerations. A number of individual firms, industry organizations, and federal agencies have endorsed some or all of these concepts at a high level as general good business practices to reduce privacy and security risks.<sup>36</sup> Yet defining firm boundaries is particularly

<sup>36</sup> See, e.g., Consumer Financial Protection Bureau, *Consumer Protection Principles: Consumer-Authorized Financial Data Sharing and Aggregation* 3 (2017); Federal Trade Commission Staff Report, *Internet of Things: Privacy & Security in a Connected World* iv, 33-39 (2015); American Bankers Association, *Statement for the Record to the Task Force on Financial Technology Regarding 'Banking on Your Data: The Role of Big Data in Financial Services* (Nov. 21, 2019); Financial Data Exchange, *The Global Industry Standard for Consumer Access to Financial Data: Organization Overview* 6-7 (2019); Center for Financial Services Innovation, *CFSI's Consumer Data Sharing Principles: A Framework for Industry-Wide Collaboration* (2016).

challenging in the credit context, in part because of the open research questions regarding the predictiveness of particular cash-flow variables, responsible servicing and collections practices, and other issues.<sup>37</sup> In addition, because data has become a growing source of competitive advantage in the market and costs relatively little to store and use, there can be strong financial incentives for firms to retain as much information as possible, even where data may not have an immediate commercial use.

Thus, while the industry efforts to move toward safer and more efficient technologies are encouraging, there are substantial questions as to the scope of those efforts and their ability to balance competing interests between different market segments, consumers and small business applicants, and broader policy considerations. And even if self-governance initiatives are successful, many industry stakeholders believe that complementary regulatory or legislative efforts are also needed to produce more efficient and beneficial outcomes, particularly by resolving outstanding questions about the application of existing law.

## 3.2 Regulatory levers

Greater engagement by federal regulators could be helpful in managing several policy concerns with regard to cash-flow underwriting and underlying data flows. For some topics, increased research and monitoring activities may be the most useful immediate step to determine how business practices are evolving and how different options might help mitigate risks if and when they manifest in the market. In other areas—particularly with regard to underlying data transfers—greater regulatory certainty could potentially help borrowers, firms, and Congress structure their own activities with more confidence.

**Research and monitoring:** As noted above, baseline research into such questions as the utility of particular cash-flow variables for specific products and populations, error rates in data as it sits originally with banks and prepaid account issuers, the potential benefits and risks of using cash-flow data in the servicing context, and consumer disclosure testing would help to inform both regulators and the broader market in addressing a range of potential policy issues as affected markets continue to evolve. While industry is working on some of these questions, there would be substantial value in additional research by federal regulators.

Increasing supervision activities could also be invaluable because examinations would provide both deeper and more consistent insights as market practices continue to evolve and a way to remedy any compliance violations relatively quickly and before they become entrenched in market practice. For instance, the Consumer Financial Protection Bureau could begin examining non-banks that are “larger participants” in markets for consumer lending, data aggregation, and model development once it issues rules to define the relevant size thresholds. Both the CFPB and the banking agencies could also step up examinations of fintech platforms, aggregators, and model developers that provide third-party services to entities under their primary jurisdiction.<sup>38</sup>

Although federal agencies’ ability to supervise non-bank actors for compliance with GLBA information safeguards requirements is limited to situations involving third-party service providers to banks, some bank and non-bank stakeholders have both suggested that increasing supervision would

<sup>37</sup> Indeed, some stakeholders have suggested that the concept of minimization should not be applied in the credit context to the extent that it would prevent lenders and model developers from obtaining data to improve the predictiveness of their models on an ongoing basis.

<sup>38</sup> The Bureau also has direct authority to examine service providers to a substantial number of banks with less than \$10 billion in assets. 12 U.S.C. § 5516(e).



still be generally helpful to building greater trust and clarifying regulators' expectations within the broader data-transfer system.<sup>39</sup>

**Providing regulatory certainty:** While research and monitoring may be a helpful first step concerning the potential for evolution toward problematic uses of transaction data in behavioral models or servicing and collections practices, there are other topics for which issuing regulatory guidance and standards in the relative near term could substantially reduce uncertainty, frictions, and/or risks in the current market. Indeed, increasing supervision activities would likely increase the urgency of resolving certain outstanding interpretive issues given that examiners and firms need to know what requirements apply.

The need for regulatory guidance appears most acute with regard to the system for transferring cash-flow data between firms, which has been evolving for more than two decades and has been the subject of particularly acrimonious policy debates in the last few years. Failing to resolve outstanding questions about compliance requirements and liability is creating a situation in which consumers' right to access their own data as recognized by Congress in 2010 is being impeded by a lack of clear standards to govern the data flows and the relationships of affected firms. Banks are understandably concerned about security and liability risks, but the fact that the system still has not transitioned away from credential sharing underlines the challenges of relying on industry to solve these issues solely on its own volition.

**Failing to resolve outstanding questions about compliance requirements and liability is creating a situation in which consumers' right to access their own data as recognized by Congress in 2010 is being impeded by a lack of clear standards to govern the data flows and the relationships of affected firms.**

The Federal Trade Commission's rulemaking to clarify and strengthen information safeguards expectations for non-bank financial institutions under the Gramm-Leach-Bliley Act is a helpful step toward greater certainty and consistency. The Consumer Financial Protection Bureau could provide substantial additional clarity by issuing guidance or rules to implement § 1033 of the Dodd-Frank Act, resolving questions about liability for unauthorized account activities under the Electronic Fund Transfer Act, deciding whether and how the Fair Credit Reporting Act applies to customer-permissioned data transfers for credit purposes, and/or clarifying the application of GLBA requirements in the data aggregation context.

Stakeholders disagree as to the prioritization between these possible elements and the potential risks that agency deliberations on particular topics would chill self-governance initiatives. Yet most agree that greater regulatory certainty on at least one or more of these topics would substantially benefit the market. That is not to say that regulatory initiatives would resolve all outstanding questions or satisfy all stakeholders. To take just one example, because EFTA focuses primarily on the liability of consumers relative to the financial institutions that provide them with accounts, resolving liability for unauthorized activities that occur as a result of consumers sharing their login credentials with an aggregator is not likely to settle questions about a bank's ability to recover any losses from downstream firms. And depending on the outcome, there is a risk of constraining data sharing activities, either by causing consumers to become more concerned about the consequences of credential sharing or by strengthening banks' concerns about releasing information that could be used to conduct unauthorized transactions (at least in the absence of clarity about § 1033 requirements). Such interconnections between issues may argue for a policy process

<sup>39</sup> A few stakeholders have suggested that subjecting non-bank entities to registration requirements could also increase trust, similar to what the United Kingdom requires for firms that receive data from banks pursuant to its open banking initiative. The Bureau has authority to impose recordkeeping and registration requirements on non-banks that are subject to its supervision authority, including background checks and bonding or other appropriate financial requirements. 12 U.S.C. § 5514(a)(1), (b)(7).

that considers the issues identified above together, although that could affect the resources and timelines for resolution.

Nevertheless, failing to resolve these questions is increasing the stakes and potential transition costs as the amount of data sharing continues to increase. And there may be ways in which beginning a regulatory process could yield substantial benefits even prior to the issuance of any final guidance or rule. For instance, some stakeholders have suggested that knowing that an interpretive initiative is underway would cause firms to approach industry standardization discussions in a different and more focused posture. Beginning work in the near term would also better position the CFPB to fill gaps more quickly if industry self-governance efforts ultimately prove unsuccessful or inadequate, as well as to alert Congress if there are situations in which a statutory solution to a particular policy issue may be needed. For example, if the CFPB decides that FCRA does not apply and/or cannot be adapted in appropriate ways to govern cash-flow data that is transferred by aggregators for credit purposes, then the onus may shift to Congress to provide any needed accuracy protections and use restrictions.<sup>40</sup>

Thus, given the interwoven and complex nature of the issues and the potential stakes involved, there are substantial arguments for launching CFPB processes to resolve the outstanding interpretive questions noted above. Although federal prudential regulators have also expressed interest in the data sharing system—even possibly by setting standards for their supervised banks—the CFPB is better situated to provide consistency for the system as a whole for the interpretive questions for which it has rulemaking authority.<sup>41</sup> A CFPB rulemaking process would allow for robust participation of all stakeholders, as well as provide the opportunity for a staged implementation process to the extent that smaller providers need more time to come into compliance. Thus, deepening CFPB engagement in 2020 could potentially sharpen the focus for related initiatives by industry, other federal agencies, and Congress, in addition to resolving longstanding interpretive issues that are within the agency's specific mandate to answer.

### 3.3 Potential legislation

While the discussions above identify a number of levers for industry stakeholders and federal regulators to more fully realize the benefits and manage the risks of cash-flow underwriting and related data transfers, only Congress has the authority to create a comprehensive and consistent regulatory framework. For example, legislation is likely the only way to do the following:

- » **Fix gaps and strengthen protections in existing federal consumer protections:** Most of the major federal consumer financial laws that are potentially relevant to cash-flow underwriting were adopted decades ago in a much different data-sharing environment. As the volume of sharing increases exponentially and as market practices evolve to rely more heavily on affirmative customer permissioning, some of the gaps are taking on new significance and some stakeholders are arguing for strengthened protections. Examples include the limitations on federal regulators' ability to supervise non-bank financial institutions for

<sup>40</sup> Some stakeholders have argued that § 1033 of the Dodd-Frank Act could provide an alternative basis for customer protections and data rights and that it would be preferable to start with a clean slate rather than adapting requirements and concepts from FCRA to address issues such as accuracy and use limitations. Section 1033 does not expressly address topics such as correcting errors or restrictions on the use of data after it is obtained from the original source, though because the Dodd-Frank Act defines “consumer” generally to include agents or representatives acting on the consumer's behalf, the Bureau could presumably define the conditions under which a firm can act an agent or a representative. 12 U.S.C. §§ 5481(4), 5533. Again, this may argue for beginning a broad-based inquiry rather than tackling individual interpretive questions in isolation.

<sup>41</sup> See, e.g., Lydia Beyoud, FDIC Eyes Data-Sharing Standards for Banks, Bloomberg Law (Apr. 24, 2019); Federal Reserve Governor Lael Brainard, Speech, Where Do Banks Fit in the Fintech Stack? (Apr. 28, 2017).

GLBA information safeguards compliance, the complex way that GLBA provisions concerning information security and restrictions on data sharing apply to parties that receive customer information from a financial institution, and GLBA's reliance on an opt-out structure in connection with certain data sharing activities.

- » **Create comparable protections for small business borrowers:** Although the Equal Credit Opportunity Act and prohibitions on unfair and deceptive practices have been applied to protect small business owners, various other federal consumer financial laws do not generally apply to commercial credit or borrowers. As a result, regulators have an extremely limited tool set with which to manage potential concerns about privacy, accuracy, information security, and other topics raised in Section 2 for business applicants.
- » **Create a tailored, consistent regime for all customer-permissioned data flows or financial data more broadly:** While § 1033 of the Dodd-Frank Act provides important access rights for consumers and their representatives, it focuses primarily on retail consumer financial products and services rather than on information about investments, retirement products, and insurance. Such information is not as likely to be pivotal for credit applications, but can be important for personal financial management. The statute also does not expressly address other data rights and protections as discussed in Section 2.4, such as the ability to correct data or to compel deletion, or liability issues between businesses. Existing laws such as the Fair Credit Reporting Act and the Electronic Fund Transfer Act may be able to provide some rights and protections for some use cases and activities, but stakeholders are divided over their application and the laws do not necessarily apply to all customer-permissioned data transfers and uses. Thus, to the extent that these existing laws cannot be construed to provide satisfactory mechanisms for addressing policy concerns across various use cases, Congressional action would be required.
- » **Establish a temporary re-insurance fund to help the private market develop better mechanisms for insuring against data security risks:** As noted above, all stakeholders agree that better insurance mechanisms could help to reduce risks and tensions in the system for customer-permissioned data flows. However, cyber security insurance in the financial system is not standardized or comprehensive. Several stakeholders have suggested that actions similar to what Congress did under the Terrorism Risk Insurance Act to create a government-funded reinsurance pool while private underwriters recalibrate their actuarial models could be helpful in the data sharing context and more generally.<sup>42</sup>

In short, there could be substantial benefits to increasing the consistency and comprehensiveness of protections that apply to (1) different sources of data for credit underwriting; (2) customer-permissioned data transfers for all types of “use cases;” and/or (3) the use of customer data in financial services more generally. Such action could not only provide important protections for groups or situations that are largely unprotected by current laws—such as small businesses—but also help to ensure that existing federal protections continue to have their intended and expected effect as technological and market practices have evolved over time.

However, such legislation is challenging to structure for a number of reasons, including the need to address questions about agency resources and jurisdiction in addition to setting substantive

<sup>42</sup> TRIA was originally envisioned as a temporary program but has been extended several times due to particularly challenging issues concerning terrorism that have also caused other countries to develop various forms of hybrid public/private reinsurance models. For general discussions of cyber insurance, TRIA, and other public-private models, see, e.g., Aaron Klein & Scott R. Anderson, A Federal Backstop for Insuring Against Cyberattacks? Brookings Institute (Sept. 27, 2019); Andrew Granato & Andy Polacek, The Growth and Challenges of Cyber Insurance, Federal Reserve Bank of Chicago Letter No. 426 (2019); EastWest Institute, Cyber Insurance and Systemic Market Risk 34-35 (2017).

standards. For example, even without substantial adjustments in substantive rules, simply extending existing protections to small business borrowers and filling the coverage and monitoring gaps with regard to existing information security requirements would require Congress to assign additional authorities and resources to one or more federal regulators. This presents important questions about centralization of authority and accountability versus the potential resource and subject matter benefits of a more distributed approach that spreads responsibility among multiple agencies that are already familiar with particular entities or subject matters from their existing activities.

In addressing substantive standards, an additional consideration is whether to tailor legislation to new activities or entities or to update existing regulatory regimes more generally to cover both traditional and new functions. Targeted approaches are often appealing because they are more context-specific and may avoid disrupting settled activities and markets. However, maintaining distinct parallel regimes can at times create awkward competitive and regulatory dynamics. For example, while some stakeholders have suggested that § 1033 of the Dodd-Frank Act could be used as a starting point for creating a tailored regulatory regime for customer-permissioned data flows, others have argued that doing so could prompt traditional credit reporting incumbents to migrate to the new system if it was perceived to be less restrictive than traditional Fair Credit Reporting Act requirements.

The broadest version of this dilemma is whether to structure legislation to focus specifically on the use of data in financial services or on data control and protections for consumers and small businesses more broadly across all commercial sectors. There are strong arguments for the latter approach, given that lines are starting to blur as nonfinancial data is increasingly being used for purposes of providing financial services and nonfinancial firms are increasingly challenging traditional providers. At the same time, linking the use of data for credit and other financial services purposes to broad general concerns about the collection and use of customer data by “big tech” companies in a range of other contexts may have substantial disadvantages in terms of timing and complexity. Thus, if a comprehensive U.S. framework is not practicable to adopt at the current time, there are strong arguments for amending existing federal financial laws because they have conditioned consumers to expect certain baseline protections with regard to credit underwriting and financial data more generally that may not in fact be operating as intended in evolving markets.

## 4. CONCLUSION

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Our research suggests that cash-flow data holds significant promise for creating more inclusive, efficient, and competitive credit markets. In light of this promise, investment of additional resources is warranted to reduce the competitive, coordination, and compliance issues that are slowing the adoption of beneficial practices and mitigation of potential risks. With thoughtful development, cash-flow based underwriting has the potential to benefit borrowers and financial services providers alike.

The issues summarized in Sections 2 and 3 highlight the importance of stakeholder and policy-maker engagement to address the policy issues raised by cash-flow underwriting and underlying data flows. The question whether cash-flow underwriting achieves its potential to foster a more inclusive, efficient, and competitive marketplace or whether it evolves in ways that heighten risks and tradeoffs for underserved borrowers will likely depend on how and whether stakeholders begin to address these critical policy issues in the next few years.

Some degree of standardization in technologies and data elements could reduce implementation costs, improve the accuracy and efficiency of data analysis, facilitate greater investment activity, and manage customer protection risks. While the market itself is beginning to push in this direction, more research is needed on certain issues and it would be difficult for self-governance efforts to resolve all of the competitive dynamics, coordination challenges, and compliance issues that are currently complicating the adoption of cash-flow underwriting.

Thus, greater engagement by regulators through increased research, market monitoring and supervision, and interpretive initiatives could be helpful. Although regulators may be inclined to wait for further market developments or for Congress to provide a comprehensive framework before committing more resources to these issues, there can be substantial opportunity costs to inaction with regard to efficiency, competitive dynamics, access to credit, and customer protection. Increasing engagement could both sharpen the focus of industry initiatives and help inform Congress about any policy issues that are difficult to manage with current regulatory tools. And resolving market challenges and regulatory questions about the underlying system for data transfers in the next few years could better position cash-flow underwriting to reach scale as lenders and secondary market actors gain a better understanding of its strengths and limitations in predicting default risk in particular credit markets.

Ultimately, constructive action by industry, regulators, and Congress will likely each be needed to improve outcomes with regard to both cash-flow underwriting and related data flows. While national legislation is the only way to provide an entirely consistent and comprehensive regulatory framework, industry and regulatory efforts can potentially both narrow the scope of issues that need to be addressed through legislative action and help to inform lawmakers' efforts. Such initiatives could not only ensure that cash-flow underwriting benefits borrowers and financial services providers alike, but could also serve as a stepping stone to managing continuing evolution in credit and data transfer markets more generally.



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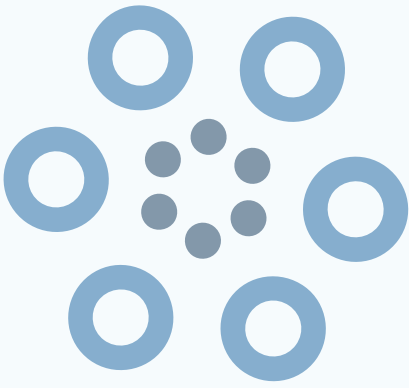
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**Published by FinRegLab, Inc.**

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