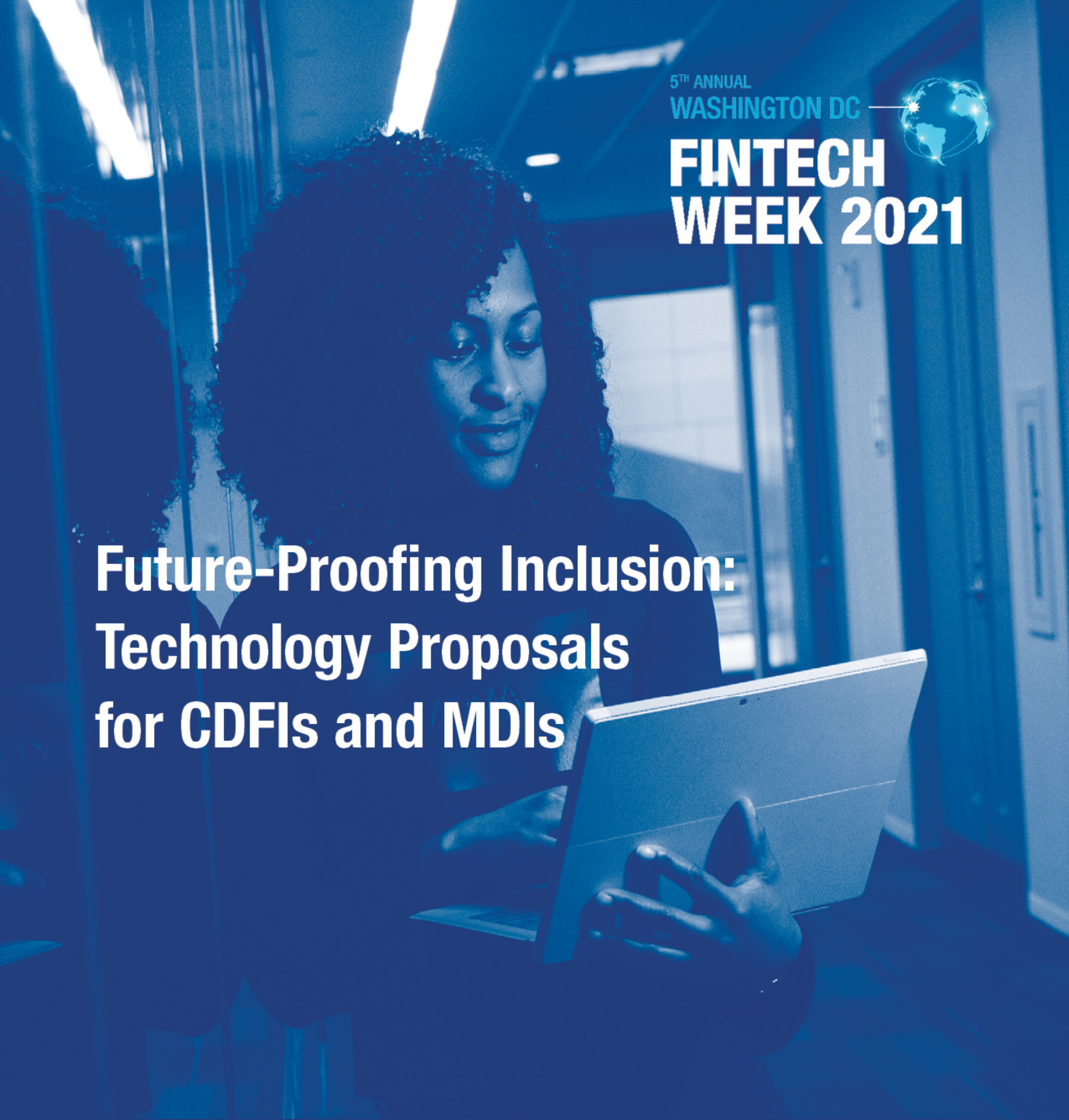

5TH ANNUAL
WASHINGTON DC
FINTECH WEEK 2021

Future-Proofing Inclusion: Technology Proposals for CDFIs and MDIs

HOSTED BY:

INSTITUTE OF INTERNATIONAL ECONOMIC LAW
GEORGETOWN UNIVERSITY LAW CENTER

THE INSTITUTE FOR FINANCIAL MARKETS

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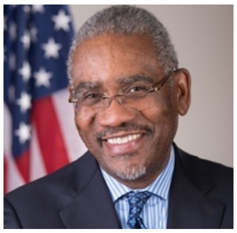
and the Generous Support of Visa's Economic Empowerment Institute

Preface



The Honorable Gregory Meeks

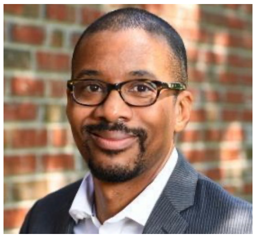
United States Representative, New York's 5th District

In Washington, we often theorize about a world where small institutions — especially minority-owned and community-focused depositories – are able to thrive in our economy and best serve those most in need. In practice, regulatory hurdles, economies of scale, and technological disruption pose existential challenges for smaller financial institutions, especially those that focus on serving the underserved.

This gap in what policymakers aspire towards and everyday realities is one that can be closed through robust communication between scholars, regulators, lawmakers, practitioners, and leaders of tomorrow. That is why I am so proud of the work being done by Professor Christopher Brummer to facilitate such dialogue, especially at the 5th annual Fintech Week.

This year's focus on MDIs and community banks is on mark as technological innovation, harnessed appropriately, can help us make significant headway in ensuring the long-term sustainability of these institutions and the communities they serve. I look forward to what comes out of these discussions and learning more about how Congress can better play its part to ensure a financial ecosystem where small depositories — especially MDIs — continue to play a key role in providing banking services.

Introduction



Chris Brummer

Agnes N. Williams Professor of Law, Georgetown University Law Center and Director, Institute of International Economic Law

Minority depository institutions (MDIs) and community banks are critical to the success of America's diverse and entrepreneurial communities. These keystone institutions provide the essential funding for people seeking to purchase (often first) homes; they provide startup funding for small businesses where customers' personal networks and family wealth may be limited and offer a source of emergency support for individuals facing unexpected liquidity challenges throughout life.

Part of the competitive advantage of MDIs is their connection to their customers and their unique appreciation of their customers' challenges.[1] Even with smaller asset bases, and locations often in rural or higher poverty areas, they have proved highly capable of operating at similar levels of relative efficiency as their non-MDI counterparts.[2] In doing so, they provide critical alternatives to higher-cost products like credit cards, designed to fund short-term liquidity, not medium to longer term business ventures in a high-touch environment.[3] And in a world where minority borrowers are faced with more loan requirements, and in which 70 percent of minority neighborhoods do not have a bank branch, their existence can serve as a lynchpin to local economic development, affordable housing, and financial security.[4] MDIs do more with the resources they have, and scholars have hypothesized that with more investment, MDIs have the capacity to overcome decades of discrimination, efficiently serving the financial needs of their communities.[5]

Nevertheless, MDIs have experienced a period of significant decline over the last three decades. Since 2009, nationally, the number of MDIs dropped from 215 to 155 at the end of the second quarter of 2018, driven in part by

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[1] The term "MDI" is one derived from regulatory practice. See Milken Institute, Minority-Owned Depository Institutions: A Market Overview (2019), at 3, https://milkeninstitute.org/sites/default/files/reports-pdf/Minority-Owned Depository Institutions - A Market Overview UPDATE-3-2p_0.pdf ("The Federal Deposit Insurance Corporation (FDIC) designates MDIs according to criteria that determine minority ownership of the depository institution. The minority ownership designation primarily refers to Asian, Black, Hispanic, and Native American populations.") [hereinafter Milken Institute Report].

[2] See generally Gregory B. Fairchild et al., Good Money After Bad? The Comparative Efficiency of Minority Depository Institutions, Journal of Developmental Entrepreneurship, Vol. 25, No. 1 (2020), https://www.worldscientific.com/doi/10.1142/S1084946720500028.

[3] See generally Milken Institute Report, supra note 1.

[4] Milken Institute Report, supra note 1, at 3 ("According to Home Mortgage Disclosure Act (HMDA) data, MDIs are far more likely to have both branches in minority neighborhoods and a significant portion of their lending activity targeting minorities.").

[5] See e.g., Salem Zelalem, Minority-Owned Banks: Doing More with Less, UVA Darden: Ideas to Action (Apr. 2, 2020), https://ideas.darden.virginia.edu/minority-owned-banks-more-with-less.

consolidation[6] and due to a significant decline in the number of MDIs owned by African Americans.[7] In addition, MDIs are far smaller than the average commercial banking institution. Black and Latino MDIs have average assets of $245 million and $2.7 billion, respectively, compared to an average of $3.1 billion for all US banks, and the largest MDI has only $38 billion in total assets.[8]

The COVID-19 pandemic threatened to hasten the decline as MDIs found themselves on the front lines of financial relief for some of the country's most vulnerable citizens. During the pandemic, MDIs, like non-MDIs, expanded their lending in response to the higher loan demand supported in part by the federal Paycheck Protection Program (PPP).[9] But as the crisis deepened, the fortunes of MDI customers tended to fall even more than elsewhere, creating a bigger shock to MDI balance sheets. Not only were MDI customers disproportionately falling ill, but racial and ethnic minority groups were unequally affected by unintended economic consequences of strategies to mitigate the disease, such as social distancing.[10] MDIs consequently suffered a significantly bigger drop in profitability than other banks during the pandemic. Their balance sheets weakened substantially.

In response, Congress passed significant measures to recapitalize MDIs,[11] but the drivers impairing MDI growth and sustainability were left unaddressed and remain. Perhaps the most significant challenge is robust technology adoption. As noted, MDIs are small in the broader commercial banking context, and thus more susceptible to challenges associated with riskier underwriting, exogenous shocks, as well as heightened surveillance, operational cost burdens, and regulatory compliance costs. Yet the MDI technology stack is not infrequently less developed and more disparately served than that of its peers. Paper based systems are common; and loan management, accounting, and customer relationship management tools utilize software systems that do not fully accommodate their customer's needs, nor consider their identities.[12]

These challenges, long understood on the ground, took special significance during the pandemic as the government enacted emergency legislation, creating what were in effect grants through forgivable loans under the Paycheck Protection Program for commercial borrowers and independent contractors seeking to subsidize their retained payroll. During the program, many MDIs lacked the proper technology to source, process, onboard, service, and retain large volumes of new customers and prospective relationships — even as the median MDI provided significantly more credit to their minority borrowers than the median non-MDI.[13] Furthermore, MDIs had to overcome pre-application processes that did not fully speak to the needs of diverse, and less wealthy customers and microentrepreneurial stakeholders.

The digital transformation of the banking system over the last 18 months has introduced if not new, then at least enhanced, competitive pressures as well. During the pandemic, brick and mortar morphed from a must- or maybe-

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[6] Milken Institute Report, supra note 1, at 12.

[7] Federal Reserve Bank of St. Louis Welcoming Remarks from James Bullard, Banking and the Economy: A Forum for Minorities in Banking Federal Reserve Bank of St. Louis (Sept. 26, 2019), at 4, https://www.stlouisfed.org/-/media/project/frbstl/stlouisfed/files/pdfs/bullard/remarks/2019/bullard_welcoming_remarks_minority_bankers_forum_26_sept_2019.pdf. ("From 2001 to 2018, the number of depository institutions owned by Asian Americans, Hispanics and Native Americans increased, while the number of MDIs owned by African Americans declined by more than half. African American MDIs represented just 15% of all MDIs at the end of last year.").

[8] Milken Institute Report, supra note 1, at 3.

[9] See generally Sophia Friesenhahn and Simon Kwan, Minority Banks during the COVID-19 Pandemic, FRSBF Economic Letter (Aug. 2, 2021), https://www.frbsf.org/economic-research/publications/economic-letter/2021/august/minority-banks-during-covid-19-pandemic/

[10] Id.

[11] See, Inclusiv, Congress Confirms Inclusion of $12 Billion in CDFI Funding in New Stimulus Bill, NEWS AT INCLUSIV (2021), https://www.inclusiv.org/congress-confirms-inclusion-of-12-billion-in-cdfi-funding-in-new-stimulus-bill/.

[12] See e.g., Anna Gomez, OFN Releases CDFI Loan Fund Technology Landscape: User Survey Results, OFN BLOG (June 28, 2017), https://ofn.org/articles/ofn-releases-cdfi-loan-fund-technology-landscape-user-survey-results.

[13] See Sophia Friesenhahn and Simon Kwan, supra note 9, at 4.

have asset to a competitive disadvantage as better resourced institutions switched online quickly to shed costs and to maintain and build customer relationships. Online and mobile usage meanwhile flourished as the pandemic accelerated trends that were already apparent — less traditional in-person and more online and digital. Supercharging digital transformation has been the proliferation of eCommerce and online shopping, as trust in online services has grown with the dependence of home-stricken consumers.[14] Yet many MDIs are poorly situated to take full advantage of the changes given their limited experience, expertise, and exposure in the digital space. Indeed, even now MDIs face the daunting challenge of competing with financial institutions that are often entirely online, or that operate in ways capable of delivering curated financial services at scale.

With that in mind, the following report prepared for Washington DC's 5th Annual Fintech Week features case studies and insights from some of the most advanced financial technology firms in the world, and as well as from firms just beginning to launch, many with some revolutionary ideas for the industry. We asked each to offer insights as to how MDIs might leverage novel applications of technology to achieve optimal growth and help service their customers.

Critically, the essays cover sectors far beyond the conventional MDI discourse, and touch on areas like open banking, machine learning, AI, and more. Directing the focus of the project towards some of the novel technologies of the future is a very intentional decision by the conference organizers. Philosophically, it is our belief that Black and Brown communities deserve the same high quality, innovative financial services as anyone else. Where the latest technologies present opportunities to help level the playing field, or bring individuals and firms long overlooked into the mainstream financial economy, they should be rigorously evaluated, and then leveraged alongside a larger toolset of government and social policy. Ignoring the digital transformation of the economy risks the further erosion of MDIs as levers of critical support for many of America's most fragile communities.

We thus thank our authors for their contributions and time to this project, and welcome responses from stakeholders and policymakers in the ecosystem as we kickstart a new, and much needed conversation.

A special thanks also goes to the Georgetown University Law Center, IFM, and Visa's Economic Empowerment Institute for their support of DC Fintech Week's MDI/CDFI Technology Dialogue.

[14] See Maria Schuld, How Technology Can Empower Community Banks to Deliver a Great Digital Experience, FINEXTRA BLOG (July 20, 2021), https://www.finextra.com/blogposting/20634/how-technology-can-empower-community-banks-to-deliver-a-great-digital-experience.

Leveraging More Data and Artificial Intelligence for Accurate, Inclusive Underwriting for MDI communities

Nat Hoopes, Head of Policy, Upstart Network, Inc.
Nicole Elam, CEO, National Bankers Association

Partnership between National Bankers Association (< $1 Billion) MDIs and Upstart Network, Inc.

In 2020, the FDIC released a report highlighting the impact of Minority Depository Institutions (MDIs).[1] The report found that MDIs help advance economic mobility in Black communities. An estimated six out of ten people living in the service areas of MDIs are Black, in contrast to only six out of ten for banks that are not Black-led. Furthermore, these financial institutions have been shown to originate a substantially higher proportion of mortgages and small business loans to Black borrowers than non-minority financial institutions. MDIs are trusted by Black Americans to help meet financial needs of people living in communities historically underserved by traditional financial institutions. As FDIC Chairman Jelena McWilliams has put it:

> *"MDIs are vital service providers for minority populations. If not for your institutions, individuals in low-and moderate-income communities might not have access to banking services. You help create jobs, grow small businesses, and build wealth. Because of the investments you make in your communities, your customers have a better opportunity to achieve their American dream."*

Increasingly, a streamlined digital loan offering is a necessity for banks to serve their communities. A study from Experian found that even before the pandemic, *50% of the US personal loan market was served online* by fintech platforms that work with banks or direct fintech lenders, up from 22% in 2015.[2] Offering technology that allows loan applications directly from smartphones can level the playing field; according to the Pew Research Center, more than eight in ten Black and Hispanic Americans own smartphones today, nearly identical to the percentage of White Americans.[3] More and more consumers are seeking credit and applying for loans from their mobile devices, which

[1] https://www.fdic.gov/regulations/resources/minority/2019-mdi-study/index.html
[2] https://www.experian.com/blogs/insights/2019/09/fintech-vs-traditional-fis-latest-trends-personal-loans/
[3] https://www.pewresearch.org/fact-tank/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s/

could create new opportunities to access affordable credit. This is happening at the same time that physical branch networks continue to shrink, often placing a burden on low and moderate income areas, rural areas and in communities of color.[4]

Against this backdrop, Upstart and the National Bankers Association (NBA) believe that MDIs can better reach the regions and communities they serve via an affordable, online unsecured personal loan offering that relies on artificial intelligence (AI) and machine learning (ML) for underwriting, using a wider range of data sources. At the same time, two challenges for financial technology companies to serve smaller MDIs are a lack of scale and opportunity cost. The common refrain is that it can take as much time and manpower for the service provider to get through diligence and onboarding with a $100 million asset size bank as it does with a $10 billion or $100 billion institution, without the associated revenue scale benefits at the end. In addition to that basic challenge, smaller MDIs may be burdened by the legacy of societal inequality and often lack the resources or staff expertise to implement expensive technology offerings to modernize their services. The large core bank technology providers do not have an incentive to tailor their products to the unique needs of MDIs.[5]

In order to establish a successful revenue generating partnership for MDIs and Community Development Financial Institutions (CDFIs) that solves the scaling issue and supports small loans, Upstart is offering special implementation pricing, tailored volume minimums, and unit pricing on small loans to NBA members to help achieve these three core objectives:

1. Reduce the typical cost/scale barriers MDIs face in adopting new technology (in this case, full support of automated digital unsecured personal loans).
2. Tailor the 'Upstart for personal lending' online unsecured loan product pricing to the MDIs' anticipated unique applicant pool that may skew towards smaller loans.
3. Tap network effects of the NBA Innovation Committee and the NBA to increase the efficiency of the due diligence process with aligned MDIs/CDFIs.

Banks using the Upstart platform can offer loans starting as low as $1,000, with pricing of all loans below 36% APR. By partnering with the NBA Innovation Committee and its members, Upstart can scale its work with a number of small banks during the critical early diligence phase of the third-party vendor review process. In doing so, Upstart also hopes to show that building relationships with smaller MDIs/CDFIs can be scalable and sustainable for a lending technology provider.

NBA members have good reasons to believe that they will have unique needs when it comes to a personal loan technology partner. NBA members need a partner who is flexible and willing to understand the unique requirements of MDIs/CDFIs and their customers. By partnering with the NBA's Technology and Innovation Committee, Upstart and NBA members hope to show that an MDI-technology partnership can achieve scale, with MDIs using responsible digital credit offerings to make a difference in minority communities. Based on experiences at branches, the NBA's MDIs have shared the key insight that they believe that online loan applications received through their own marketing channels will skew heavily towards smaller loan sizes, and they need a structure that makes such loans sustainable.

[4] National Community Reinvestment Coalition Bank Branch Closure Update 2017-2020. https://ncrc.org/research-brief-bank-branch-closure-update-2017-2020/

[5] Insight from Project REACh / National Bankers Association

Improving Access to Credit in Minority Communities

Study after study has found that access to fair, affordable credit is critical for economic mobility.[6] Finding and pricing underserved borrowers who need credit is not easy. The Wall Street Journal reported in July that some 53 million U.S. adults lack traditional credit scores because they have a "thin" or nonexistent history of borrowing.[7] Similarly, in 2017, the Consumer Financial Protection Bureau (CFPB) "estimate[d] that 26 million Americans are 'credit invisible,' meaning they have no credit history at all," and "another 19 million people have credit histories that are too limited or have been inactive for too long to generate a credit score" under traditional credit scoring models.[8]

Furthermore, the CFPB has found that Black and Hispanic Americans, often served by MDIs, are more likely than White or Asian Americans to be credit invisible or to have un-scored records, and typical approaches to building strong credit files — for example, "[t]he use of co-borrowers and authorized user account status — [are] notably less common in lower-income neighborhoods."[9] To promote fair access to credit for all individuals, including those in these circumstances, federal regulators have recognized that credit underwriting is an area where AI and ML and their use of alternative data can be particularly effective. The CFPB, for instance, has reported that:

> *"In addition to the use of alternative data, increased computing power and the expanded use of machine learning can potentially identify relationships not otherwise discoverable through methods that have been traditionally used in credit scoring. As a result of these innovations, some consumers who now cannot obtain favorably priced credit may see increased credit access or lower borrowing costs."*[10]

But the challenge today is more than just using data and technology to price these customers fairly for credit based on their true risk; in 2021, serving borrowers who need access to unsecured credit increasingly means offering convenient, fairly priced products *online, enabled for applications from mobile devices*.

Given these dynamics, Upstart is the right type of technology partner for MDIs for a number of reasons. The automation of the loan application process provides a more streamlined and efficient process that benefits both financial institutions and consumers. Approximately 71% of loans originated through Upstart's platform by bank partners are fully automated, with more than [65%] fully completed on a mobile device. Second, the Upstart AI/ML-powered credit underwriting model, relying on more than 1,000 data points, has demonstrated how alternative data use can significantly expand fair credit availability in a fair and responsible manner, consistent with fair lending laws and regulations, while also potentially improving bank safety and soundness.[11] The model has been proven to (1) be more accurate than traditional underwriting models, and (2) allow for greater access to credit at lower rates of loss.[12] Upstart's validation testing has consistently shown, using measures of statistical accuracy like AUC, that the model improves accuracy by at least two times compared to that of a traditional model.[13] An internal study comparing the

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[6] https://equitablegrowth.org/race-and-the-lack-of-intergenerational-economic-mobility-in-the-united-states/

[7] Andriotis, A. (2021, July 24). FICO Score's Hold on the Credit Market Is Slipping. Wall Street Journal. https://www.wsj.com/articles/fico-scores-hold-on-the-credit-market-is-slipping-11627119003.

[8] Schmidt & Stephens, supra note 8, at 141-142. 24 See id. 25 Cordray, supra note 1; see also Kenneth P. Brevoort, et al., CFPB Office of Research, "Data Point: Credit Invisibles," and https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf

[9] See Kenneth P. Brevoort & Michelle Kambara, CFPB Office of Research, "Data Point: Becoming Credit Visible," available at https://files.consumerfinance.gov/f/documents/BecomingCreditVisible_Data_Point_Final.pdf.

[10] "An Update on credit access and the Bureau's first No-Action Letter," CFPB Blog (Aug. 6, 2019), available at https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/.

[11] Regulators have consistently identified the importance of more accurate credit underwriting for safety and soundness of financial institutions: https://www.minneapolisfed.org/article/2014/underwriting-standards-lessons-from-the-past

12 https://www.upstart.com/about#results-to-date-3

[13] Based on an internal studies comparing Upstart's model with a hypothetical lending model formulated using Upstart's approximation of credit score variables used in traditional simple rules-based lending models and additional variables including loan amount, debt-to-income ratio, monthly income, number of credit inquiries and number of trade accounts.

Upstart model to that of several large U.S. banks found that Upstart's model could enable these banks to lower loss rates by almost 75% while keeping approval rates constant.[14]

Further, an access-to-credit review by Upstart of its 2020 data using comparison methodology specified by the CFPB, showed that Upstart's AI model approved 26% more borrowers than high-quality traditional lending models at 10% lower APRs.[15] This follows on the heels of what the CFPB has highlighted about Upstart in 2019 – that the reported data and testing suggests a credit expansion is inclusiveness: "…this reported expansion of credit access reflected in the results provided occurs across all tested race, ethnicity, and sex segments."[16]

How the Upstart/MDI Partnership Supports Smaller Loans

Upstart helps banks and credit unions lend as little as $1,000 in a traditional installment form with all rates below 36% APR. Upstart's offering for the NBA's small MDIs has **two** critical components, with both being utilized in the partnership. The first is the *Upstart Referral Network*, where Upstart markets and sources new customers for the banks; the second is the *Personal Loans Powered by Upstart* offering where the member banks can market the product themselves and cross-sell to existing customers using Upstart's underwriting and verification technology powering their own branded website's personal loans application process. This combination enables MDIs to build a profitable and broad-based regional personal loan portfolio, while also offering a direct branded resource to the immediate communities they serve.

The MDIs in the NBA expect that when marketing their new Upstart-powered online loan product themselves, they will attract online applicants seeking lower loan amounts than the typical bank that Upstart might power. To address this possibility, Upstart has tailored the National Bankers Association's 'Personal Loans Powered by Upstart' program to ensure sustainable per-loan pricing if that does indeed occur. Here are the basics on the two programs:

Upstart Referral Network

The Upstart Referral Network benefits MDIs by expanding access to customers outside of their immediate business footprint. Upstart partnered with the NBA to allow a lower minimum commitment of funded loans, allowing them to find borrowers within their risk tolerance across each of their specific footprints. Upstart is not only an industry leader in underwriting personal loans, it is also a leading marketer. This allows MDIs with smaller marketing teams and budgets to capitalize on the learnings and reach of Upstart's marketing program.

Personal Loans Powered by Upstart

The 'Personal Loans Powered by Upstart' product allows financial institutions to easily launch a digital lending program across multiple consumer lending products. This solution allows lenders to offer an industry leading customer experience by leveraging Upstart's lending application process. They are also able to offer their customers lower rates and higher approval rates by leveraging Upstart's constantly improving underwriting and pricing engine. Upstart's model natively approves more Black and Hispanic borrowers, at lower APRs. By partnering with the NBA,

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[14] In an internal study, Upstart replicated three bank models using their respective underwriting policies and evaluated their hypothetical loss rates and approval rates using Upstart's applicant base in late 2017. To compare the hypothetical loss rates between Upstart's model and each of the replicated bank models, Upstart held approval rates constant at the rate called for by each bank's respective underwriting policy. The results represent the average rate of improvement exhibited by Upstart's platform against each of the three respective bank models.

[15] Approval numbers compare the 2020 loan approval rate by the Upstart model and a hypothetical traditional credit decision model. The APR calculation compares the two models based on the average APR offered to borrowers up to the same approval rate. The hypothetical traditional model used in Upstart's analyses was developed in connection with the access-to-credit reporting requirements under its CFPB No- Action Letters, is trained on Upstart platform data, uses logistic regression and considers traditional application and credit file variables.

[16] "An Update on credit access and the Bureau's first No-Action Letter," CFPB Blog (Aug. 6, 2019), available at https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/.

Upstart has further modified its pricing structure to allow NBA-member banks to offer even more favorable rates — especially in lower loan amounts. This approach can help keep customers out of the treadmill cycle of debt perpetuated by payday loans and high-rate installment lenders. Since the majority of loans on the Upstart platform are used to consolidate existing debt, this solution benefits customers by creating a more stable financial pathway.

Both Upstart and the NBA have a deep commitment to working on ways to enable low-income borrowers to recover from a short-term setback in a financially sustainable manner, and to avoid debt traps. For those who really need it the most, the only capital available for urgent needs is typically extremely expensive (i.e., payday loans). Upstart and the NBA know that while they are marketed as a one-time quick fix, the average payday loan borrower can take out eight loans a year, with lenders charging $15-$20 per $100 borrowed — an approximate of 400%+ APR.[17] Upstart and the NBA members are actively working through how the partnership can help NBA banks better serve borrowers who have a history of being denied credit and who may need even smaller sized loans.

Possible Future Areas for Collaboration between NBA MDIs and Upstart: Fairer Auto Loans

Auto loan debt is one of the largest categories of household debt, after mortgages and student loans. Americans owe $1.37 trillion in auto loan debt with an average auto loan balance of $19,865 in 2020.[18] Most consumers finance their auto purchase through either direct or indirect lending. Borrowers can obtain auto loans directly from banks/credit unions that have no connection to an auto dealer. Buyers can also secure financing indirectly at a car dealership. In this instance, a dealer would share a borrower's financial data with lenders who decide whether to make a loan. In this scenario, a dealer markup can occur if the indirect lender allows the dealer to charge a higher interest rate than the one originally provided.

Nearly all American households own at least one vehicle and depend on it to go about their daily lives. An auto often provides not only physical mobility, but also economic mobility. In many places across the country, reliable public transportation is not a viable option and a vehicle is needed to get to work, take children to school, or make it to a doctor's appointment. Autos are also very expensive to purchase. In 2021, the average price of a used car soared to an all time high of $25,453[19] – almost $3,000 higher than the previous year — and the average interest rate for a consumer with subprime credit buying a used car was 17.26%.[20]

Americans almost always borrow money to purchase a car and their loan terms often vary by income, age, location and unfortunately race. An auto loan with a high interest rate could be devastating to an individual or family who is barely making ends meet. A recent study found that Black and Hispanic borrowers were 1.5 percentage points less likely to be approved for a loan and they pay 0.7% higher interest rates, regardless of their credit history.[21] The same study also found that although bank loans were much less likely to be discriminatory, tens of thousands of Black and Hispanic borrowers are denied loans they would have been approved for had they been White.[22] Upstart believes that non-prime borrowers especially are often paying too much for their auto loans. These individuals, priced less

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[17] Upstart research and CFPB Report: "Consumer use of payday, auto title, and pawn loans" https://www.consumerfinance.gov/data-research/research-reports/consumer-use-of-payday-auto-title-and-pawn-loans-insights-making-ends-meet-survey/

[18] Lembo Stolba, Stephen. "U.S. Auto Debt Grows to Record High Despite Pandemic" Experian. https://www.experian.com/blogs/ask-experian/research/auto-loan-debt-study/

[19] Naughton, Nora, "Looking to Buy a Used Car? Expect High Prices, Few Options," Wall Street Journal, https://www.wsj.com/articles/looking-to-buy-a-used-car-expect-high-prices-few-options-11620639000.

[20] Zabritski, Melinda. "Auto Finance Insights: State of the Automotive Finance Market, Q1 2021." https://www.experian.com/content/dam/noindex/na/us/automotive/finance-trends/q1-2021-state-of-auto-finance.pdf

[21] Butler, Alexander W. and Mayer, Erik J. and Weston, James Peter, "Racial Discrimination in the Auto Loan Market." https://ssrn.com/abstract=3301009

[22] Ibid.

accurately by traditional lending models and credit scores, have an opportunity to reduce their monthly expenses via Upstart's AI lending platform. Many of these would-be borrowers are often left out of fair auto financing because of biases that do not reflect their true risk or ability to repay.

Upstart recently examined the auto lending market and existing loan volume using the AI lending platform. Upstart discovered that more than 25% of existing auto loans, or one in four, could be refinanced at a lower rate to save borrowers at least $20 a month.[23] That can translate to hundreds of billions of dollars in potential savings for consumers, significantly impacting those with higher interest rates. There are three ways to tackle this problem: better direct auto loans; better indirect auto loans; and online auto loan refinancing options.

Appendix – The Upstart Technology Platform

Upstart is a leading AI lending platform designed to improve access to convenient and affordable credit while reducing the risk and costs of lending for bank and credit union partners. More than half of all loan applications powered by the Upstart platform begin on the borrower's smartphone. By leveraging Upstart's AI platform that harnesses over 1,000 data points, Upstart-powered lending banks can offer higher approval rates and experience lower loss rates, while simultaneously delivering the exceptional digital-first lending experience their customers demand. Upstart's platform helps to improve the borrower experience along two important dimensions.

While many fintech companies have decided to compete with banks or become a bank themselves through either a charter application or acquisition of a bank, Upstart has chosen the decidedly different path of partnering with banks and credit unions. Upstart provides the technology to banks and credit unions that allows them to offer fully digital experiences across multiple consumer lending products. Importantly, Upstart's platform allows lenders to launch and maintain top-rated digital lending experiences without a substantial investment in technology and personnel that would be out of reach for all but the largest financial institutions. Upstart's credit underwriting platform, now eight years old, harnesses AI and ML and uses data that goes beyond traditional credit scores, helping financial institutions of all sizes identify creditworthy consumers online and price risk more accurately.

Well-regulated partnerships between financial institutions and technology companies, like Upstart, are critically important today for the financial health of consumers and the banking system. Working with Upstart helps banks do more than convert a traditional loan product into a digital offering. Because of Upstart's use of additional data and AI/ML techniques, the banks and credit unions that work with them are able to offer loans to more consumers who might not qualify using traditional underwriting methods. Among other things, this enables them to increase the percentage of consumer loans that are made to low-and-moderate income borrowers.[24] Upstart has demonstrated that helping financial institutions lend money safely to more consumers, or alternatively, reduce their credit losses, is an area uniquely suited to the use of AI and alternative data.[25]

There also are fair lending benefits to AI/ML credit underwriting models compared to traditional credit underwriting models. Upstart has worked proactively with the CFPB to demonstrate that using AI technology in lending can improve credit access and reduce interest rates for borrowers in all demographic groups, when compared to traditional underwriting approaches.[26] Upstart's quarterly fair lending test results to date indicate that AI models can

[23] This information is estimated based on consumers who qualified for a rate through Upstart. As of 7/1/2021, at least 25% of consumers received a rate that would allow them to save at least $20 a month when refinancing their vehicle.

[24] Through March 31, 2020 45.5% of loans made relying on the Upstart model go to individuals who would meet the definition of being low or moderate income. LMI calculations in this internal analysis are approximate using Upstart borrower data: reported individual borrowers' income were used in lieu of household income and zip codes were used as a proxy for census tract information. Upstart By The Numbers. https://www.upstart.com/blog/upstart-by-the-numbers

[25] See Upstart.com Results To Date. https://www.upstart.com/about#results-to-date-3

[26] An update on credit access and the Bureau's first No-Action Letter. https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/

be used without generating unlawful disparate treatment of, or disparate impact on, protected-class borrowers. In addition to the quantifiable benefits of AI/ML credit underwriting models, the results also demonstrate the qualitative benefits to this technology as compared to traditional credit underwriting models. In particular, the use of AI/ML technology can help eliminate unconscious or conscious human bias in the credit underwriting process through the use of AI/ML credit underwriting models that require little, if any, human intervention.

While these quantitative and qualitative benefits of AI/ML credit underwriting models make a compelling case for use of this technology in any economic environment, the COVID-19 pandemic has intensified the need for the critical role that AI/ML credit underwriting models can play during an economic recovery. For example, Upstart has experienced only half the increase in payment impairments — both at the peak of COVID-19 pandemic, and to date — compared to the industry standard, despite the fact that borrowers of Upstart-driven loans have a 25 point lower average FICO score.[27] A significant part of the success of Upstart's AI/ML credit underwriting model under these circumstances can be attributed to the model's ability to quickly incorporate unemployment data and other economic forecasts, which Upstart feels will be especially valuable to fair and accurate underwriting by MDIs.

[27] Based on a comparison of Upstart payment impairment rates to industry impairment rates provided in "dv01 Insights COVID-19 Performance Report Volume X," dated as of March 31, 2021 (the "dv01 Report"). The dv01 Report analyzed over 2.5million active loans with a weighted average FICO score of 720, which is 50 points higher than the weighted average FICO score of Upstart borrowers. Payment impairments include both hardships and delinquencies.