FINREGLAB STUDY FINDS IMPROVEMENTS IN CONSUMER UNDERWRITING AND CREDIT ACCESS FROM MODELS USING MACHINE LEARNING AND CASH FLOW DATA

WASHINGTON, D.C., July 1, 2025 – FinRegLab today released new empirical research demonstrating that adopting machine learning techniques and incorporating cash flow data into credit underwriting can significantly increase predictiveness and expand credit access for consumers—without increasing lenders' default risk.

The report, titled "Advancing the Credit Ecosystem: Machine Learning & Cash Flow Data in Consumer Underwriting," analyzes how different data inputs and modeling approaches affect underwriting outcomes. Using anonymized data from a national credit bureau and a leading data aggregator, FinRegLab built logistic regression and machine learning models that incorporated different data sources—traditional credit bureau data, cash-flow data, or both. The study then compared the models' predictions against actual credit performance on new accounts opened in 2018-2019.

"This research gives financial institutions a clearer lens into how different innovations impact both underwriting performance and credit access," said FinRegLab CEO Melissa Koide. "By comparing the impacts of advanced analytics and alternative data both separately and together, we provide practical insights for sharpening credit strategies and making more informed investment decisions in underwriting systems."

Key findings include:

- **Machine learning models substantially outperformed traditional logistic regression methods** across all types of data (cash flow data only, credit bureau data only, or both sources combined).
- **Adding cash flow data to credit bureau data also improved predictiveness.** The impacts were somewhat smaller than for adopting machine learning techniques, but data limitations made it difficult to evaluate impacts on consumers who are most likely to benefit because they have little or no traditional credit history.
- **Overall, the machine learning model that combined cash flow and credit bureau data performed the strongest.** The machine learning model built with credit bureau data only was the second most predictive.
- **In simulations at risk cutoffs that are used by mainstream lenders, the two strongest machine learning models increased credit approvals by about 4% over similar models that relied on simpler analytics.** The two models also substantially reduced approvals among consumers who went on to struggle with their loans.

  To provide a sense of scale, in 2023 about 55 million new credit card accounts and 3.8 million new mortgages were originated using similar risk cutoffs. A 4% increase in borrowers who are deemed to be creditworthy at those thresholds would work out to roughly two million credit card accounts and 152,000 additional mortgages.

Market and Policy Implications

The research provides one of the first systematic comparisons of adopting artificial intelligence and alternative data for consumer credit underwriting, both independently and in combination. The study highlights opportunities for lenders to enhance predictiveness, reduce default risk, and increase credit

access. For lenders—especially smaller institutions—who may be hesitant to implement both changes simultaneously, the study shows that staging improvements can still deliver measurable gains in predictiveness and credit access.

Over the long term, these findings suggest that transitioning to machine learning models that incorporate both cash flow and credit bureau data can produce the largest overall improvements relative to traditional approaches. They also suggest that investing further resources to identify best practices and facilitate responsible adoption of both innovations could have substantial benefits for consumers, lenders, and the broader national economy.

About FinRegLab

FinRegLab is a nonprofit, nonpartisan innovation center that tests new technologies and data to increase access to responsible financial services that help drive long-term economic security for people and small businesses. With our research insights, we facilitate discourse across the financial ecosystem to inform market practices and policy solutions.

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