Invisible Primes: The Use of Alternative Credit Data in Auto Underwriting

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PHILADELPHIA
Disclaimer: The views expressed today are the presenter’s and do not necessarily reflect the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System
“For decades, the arbiters of creditworthiness have been two powerful groups: the Big Three credit bureaus, which keep files on roughly 200 million consumers, and score creators like FICO, which turn that raw data into a three-digit key to credit cards, *car loans*, mortgages and more.”
“But with tens of millions of consumers left out of traditional credit scoring... established players and slick start-ups alike are collecting and crunching all manner of other data to determine who ought to get a loan and how much they should pay....Data is really a big equalizer.”

“No Credit Score? No Problem! Just Hand Over More Data”
New York Times 11/29/21
The Credit Invisible

- 254 million U.S. adults (2020 census data)
- Nearly 21% of U.S. adults (53 million) are credit invisible!
The Credit Invisible refers *thin-file and no file* applicants (TFNF).

TFNF consumer population sizes
- 28 million Americans with *no* credit history
- 25 million Americans are *unscorable* because of insufficient or stale data

Reasons for the credit invisible include
- Paying with cash
- Living in areas without credit opportunities
- Creditors not reporting to the credit bureaus
- Family cultures do not believe in borrowing
- Status as a first-time borrower
- Immigration status

*Source:* National Credit Union Administration
Most consumers have a mix of **visible** and **invisible** credit activity

- **Visible** credit activity refers to data reported to the three national credit bureaus (Experian, Equifax, and TransUnion)
- **Invisible** credit activity refers to data not used in traditional credit scoring. Including **payments for rent, telecommunications, insurance, and utilities**
Credit Invisibles by Age

Source: CFPB 2016 report
Credit Invisibles by Income

Source: CFPB 2016 report
Credit Invisible by Race

Source: CFPB 2016 report
Consequences of Being Credit Invisible

- Because most lenders rely on credit histories, 53 million Americans face challenges obtaining credit.
- Access to credit is a critical aspect of financial wellness and wealth building, including financing for a car or home.
- Catch-22: You need a credit history to obtain credit, but cannot establish one without first obtaining credit.
- The credit invisible may also experience adverse outcomes in other critical aspects of their personal finances because employers, landlords, and insurers often rely on credit histories to evaluate applicants.
“Even though the vast majority of the U.S. population—80 percent—never defaulted on a loan, less than half have access to prime credit.”

-Dimuthu Ratnadiwakara, assistant professor of finance at LSU and co-author of the NBER working paper, Invisible Primes: Fintech Lending with Alternative Data

• While credit history has strong predictive value for credit decisions, alternative data can also reliably inform credit decisions and allow lenders to more accurately price credit risk
# Types of Credit Data

<table>
<thead>
<tr>
<th>Traditional credit models</th>
<th>Alternative credit models</th>
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<tbody>
<tr>
<td>Traditional credit data</td>
<td>Commonly used alternative data</td>
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<tr>
<td>Lines of credit</td>
<td>Rent history</td>
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<td>Utilizations rate</td>
<td>Utility and cell phone bills</td>
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<td>Length of credit history</td>
<td>Employment history</td>
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<td>Loan payment history</td>
<td>Property ownership</td>
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<td>Credit mix</td>
<td>Phone number and address stability</td>
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<td>Nontraditional alternative data</td>
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<td>Social media</td>
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<td>Browsing history</td>
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<td>Behavioral data</td>
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<td>Shopping patterns</td>
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<td>Data about consumers’ friends and associates</td>
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Potential to enable greater access to credit

**Source:** Treasury Dept., *A Financial System That Creates Economic Opportunities*
Trends in alternative data adoption

- Lenders are increasingly using traditional credit scoring, alternative data, or a mix of both.

- According to a 2022 survey by LexisNexis Risk Solutions, the “use of alternative credit data in risk management strategies is moving from an innovative approach to an established best practice for financial inclusion.”

- A 2022 survey report by Nova Credit found that “far more midsized lenders — those with 500-1,000 employees — reported using it than larger organizations with 1,000+ employees (80% vs. 39%)”
Advantages of Alternative Data

How alternative data use has benefited the customer experience

- Opportunity for customers who might not have qualified: 72%
- Those with limited credit history benefit from more transparency: 64%
- Presenting customers optimized offers for credits and services: 62%
- Opportunity for customers to obtain better rates: 56%
- Speeds up time to approval: 54%
- Minimizes customer friction: 42%
- Present approvals for those who might not repay: 30%
- Alternative data has not provided any CX benefits: 1%

Overall (N = 225)

Source: LexisNexis Risk Solutions 2023 Alternative Data Impact Report
## FICO ranking of predictive power of alternative data

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<th>Data</th>
<th>Includes</th>
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<tr>
<td>1</td>
<td>Financial Accounts</td>
<td>• Credit trade line</td>
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<td></td>
<td>• Transaction level banking</td>
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<td></td>
<td>• Demand deposit account</td>
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<tr>
<td>2</td>
<td>Bill payments</td>
<td>• Telecom</td>
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<td></td>
<td>• Utility</td>
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<td></td>
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<td>• Rent</td>
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<tr>
<td></td>
<td></td>
<td>• Retailers</td>
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<tr>
<td>3</td>
<td>Non-financial</td>
<td>• Public records</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Retail purchase info</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mobile device</td>
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<tr>
<td></td>
<td></td>
<td>• Social network</td>
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Big Three Alternative Credit Data Scoring Solutions

- **TransUnion** - TruVision Credit Risk
  - Variety of risk models, including Alternative Credit Risk Models and “Blended Data” models that combine trended credit data with alternative data

- **Experian** – Lift Premium & specialty tools
  - Combines traditional and expanded FCRA-regulated data sources to expand your lending universe
  - Alternative credit data as a product
  - **Automotive lending suite** of tools

- **Equifax** – DataX Credit Report
  - Uses alternative payment types (checks, cash, money orders, ACH, etc.), and is inclusive of full header, tradeline, performance and payment data
Other Alternative Credit Data Scoring Solutions

- **FICO - Score XD**
  - Developed in partnership with LexisNexis Risk Solutions and Equifax
  - Uses alternative data in credit risk scoring models
  - Generates a score on more than 70% of previously unscorable credit applicants, many of whom may have been denied due to lack of prior credit history

- **MicroBilt – I Predict Advantage**
  - Generates consumer credit reports and risk scores for businesses that offer short term, rent-to-own, retail, consumer, and auto finance lending.
  - Collects recurring bill repayment data, such as monthly billing data from rent, utility, phone plans, car insurance, and streaming media subscriptions.

MicroBilt and LexisNexis C.L.U.E. (affiliated with LexisNexis Risk Solutions) are among the CRAs listed on the CFPB’s directory.
- FICO XD scoring data
  - Pay TV or cable bill history
  - Utility bill history
  - Phone bill history

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<thead>
<tr>
<th></th>
<th>92%</th>
<th>2.5%</th>
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<tr>
<td></td>
<td>of Americans have cell phones</td>
<td>of Americans’ credit bureau files include telecom payment data</td>
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<tr>
<td></td>
<td>61%</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>of Americans pay for utilities</td>
<td>of Americans’ credit bureau files contain utility payment data</td>
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9 million unscorable consumers scored 620 or higher with FICO XD

Source FICO
Cashflow Only Intermediaries

- Mastercard - Finicity
- PrismData – CashScore
  - No credit history is required to calculate a CashScore.
  - Only bank account transaction history (i.e., the digital bank statements) from a consumer’s primary bank account, with at least three months is need to generate a score.
- Plaid – Assets API
  - Lenders can verify consumer-permissioned cash-flow data, and up to two years of transaction history, directly from their bank account
Alternative scoring using international credit history

NovaCredit

- **Consumer Credit Offering**
  - U.S. Immigrants may be eligible to Pre-qualify for auto loan through a Nova Credit’s partnership using their foreign credit history

- **Credit Passport** – B2C product
  - Available for direct and indirect auto lenders
  - Opens access to international consumer-permissioned credit data.
  - Translates an international credit report into a local-equivalent credit score; tradelines; risk attributes; and other common measurements.
FICO has partnered with Finicity to analyze transaction account cash flow to calculate a FICO credit score, including:

- How long account has been open
- Frequency and recency of transactions
- Total cash on hand
- History of positive account balances

However, consumers will only benefit if they apply to lenders using UltraFICO.

- Lenders currently using this is limited
- More information is available [here](#)
Auto-loan refinancing partnership with opt-in

- **Caribou** (formerly MotoRefi)
  - Consumers participating in *Esusu’s rent reporting program may be prequalified* for car loan refinancing with Caribou.
  - "One of the most valuable and popular credit lines we saw renters open was car loans, with 16,900+ car loans granted to those with new or improved credit."

- **Esusu** — Consumer-permissioned intermediary
  - The only intermediary reporting platform to work with both Fannie Mae and Freddie Mac Multifamily
  - Reports rent payments to CRAs for over 1,400 properties across the country, and over 184,000 units.
  - Includes multifamily and single-family rentals.
  - Established 27k+ credit scores and 107k+ established new credit lines from enrolled renters.
Model Validation

• The National Bureau of Economic Research analyzed loans originated using the alternative data loan platform of Upstart, a fintech company.

• The study concluded alternative data loans “lead to better economic outcomes for the borrowers and higher returns for the fintech platform”

• “Upstart model approves 43.4% more Black borrowers and 46% more Hispanic borrowers than a traditional credit scoring model, with approximately 25% lower APRs. Upstart website

• Auto Partners: Acura, Honda, Kia, Lexus, Mercedes-Benz, Mitsubishi, Subaru of America, Toyota and Volkswagen

• Upstart also offers car refinance loans
Most of the new vehicles in the United States in 2022 were acquired with financing, while less than half the sale of used cars had financing. Statista
Car Ownership & Opportunities

- 80% My car increases my access to my community
- 76% My car increases my ability to help others
- 67% Owning a car opens up income opportunities that I otherwise wouldn't have
- 72% My car allows me to spend more quality time with my family

Note:
1) Sample size: 2,200 U.S. adults ages 18+. Of the 2,200, 643 have purchased a car in the last six months and are considered “current buyers”, and 1,557 self-reported that they’re planning to purchase a car within the next two years and are considered “future buyers”.
2) Among U.S. consumers who strongly agree or somewhat agree with the statement.
Black households are 3 times as likely as the average household to be carless

Percent of households without a vehicle by race/ethnicity: Omaha-Council Bluffs, NE-IA Metro Area, 2015

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>All</td>
<td>6.1%</td>
</tr>
<tr>
<td>White</td>
<td>4.6%</td>
</tr>
<tr>
<td>Black</td>
<td>18.6%</td>
</tr>
<tr>
<td>Latino</td>
<td>6.5%</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>11.2%</td>
</tr>
<tr>
<td>Mixed/other</td>
<td>13.1%</td>
</tr>
<tr>
<td>All people of color</td>
<td>12.9%</td>
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Consumer Protection Concerns
CFPB and Federal Partners Confirm Automated Systems and Advanced Technology Not an Excuse for Lawbreaking Behavior

Tech marketed as “artificial intelligence” and as taking bias out of decision making has the potential to produce outcomes that result in unlawful discrimination

APR 25, 2023

FEDERAL RESERVE

Artificial Intelligence and Bank Supervision

Regulators are gathering information about how banks use AI

Artificial intelligence has come a long way since English math teacher Thomas Bayes first introduced it more than 200 years ago. Today, it is deployed AI-based chatbots for customer service, and only 25 percent questions, pay routine bills, and deliver fraud alerts.

-30-

Aiming for truth, fairness, and equity in your company’s use of AI

By: Elisa Jillson | April 19, 2021

Joint statement on enforcement efforts against discrimination and bias in automated systems
Fair lending risks of using alternative data in credit decisions

- While alternative data offers great promise to reach the credit invisible, it can also increase fair lending risk
- Some data sets can have disparate impact on minority applicants, such as using an applicant’s college
- In 2008, American Expressed reduced credit card limits for certain customers based on where they shopped
- Facebook allowed landlords to filter advertisements based on race, resulting in an enforcement action for violating the Fair Housing Act
The Equal Credit Opportunity Act requires lenders taking adverse action on a credit application to provide a notice explaining the basis for its decision.

If a lender relies on a complex algorithm utilizing many different data points, it may be challenging to explain the basis.

The Consumer Financial Protection Bureau issued guidance in 2020 to help lenders to address this issue.

Our outreach publication also addressed this issue “Advanced Topics in Adverse Action Notices Under the Equal Credit Opportunity Act” (Consumer Compliance Outlook 2021).
The federal banking agencies issued guidance in 2019 on alternative data. The agencies encourage responsible use of alternative data, which can expand access to credit and produce other benefits to consumers.

“Robust compliance management includes appropriate testing, monitoring and controls to ensure consumer protection risks are understood and addressed.”

The guidance favorably discussed the use of cash flow data.
Concluding Remarks

• Credit underwriting is gradually expanding to include alternative data sets

• This epochal shift will allow lenders to offer credit to invisible primes

• In the auto lending space, this will result in more car loans at more favorable rates with better outcomes

• But appropriate guardrails are necessary to mitigate compliance risk
• 2015 CFPB: Data point: Credit invisibles

• 2016 CFPB: Who are the credit invisibles? How to help people with limited credit histories

• The Use of Cash-Flow Data in Underwriting Credit: Empirical Research Findings (FinReg 2019)

• Invisible primes: fintech lending with alternative data (National Bureau of Economic Research 2022)

• Keeping Fintech Fair: Thinking About Fair Lending and UDAP Risks (Consumer Compliance Outlook 2017)

• Advanced Topics in Adverse Action Notices under the Equal Credit Opportunity Act (Consumer Compliance Outlook 2021)