



A Missing Link Now Found : Non-Traditional Financial Data

Auto Insurance Report 2025 National Conference

May 5, 2025

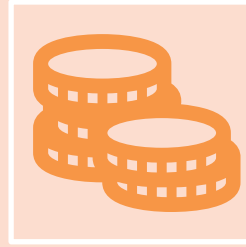
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Managing Principal

Analysis of Non-Traditional Financial Data



SIGNIFICANT ELEMENTS FROM
TRADITIONAL CREDIT AND NON-
TRADITIONAL FINANCIAL SOURCES

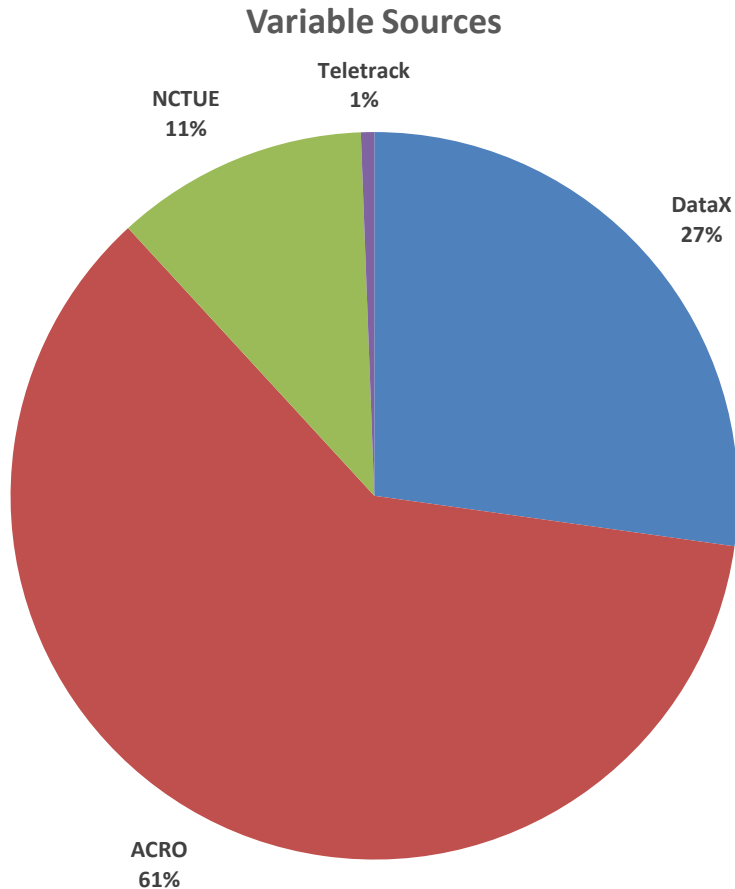


IMPACT OF NON-TRADITIONAL FINANCIAL
ELEMENTS IN RATING AND
UNDERWRITING



FAIRNESS CONSIDERATIONS

Distribution of Significant Variables



- Traditional credit variables make up the just over 60% of the significant variables
- Almost 40% of the significant variables come from alternative data sources
 - Majority of these come from specialty finance
 - NCTUE

Significant Variables by Category

Traditional Credit Characteristics

- Includes some of the traditional characteristics
- Many related to retail, telecom, utility, personal finance, department stores

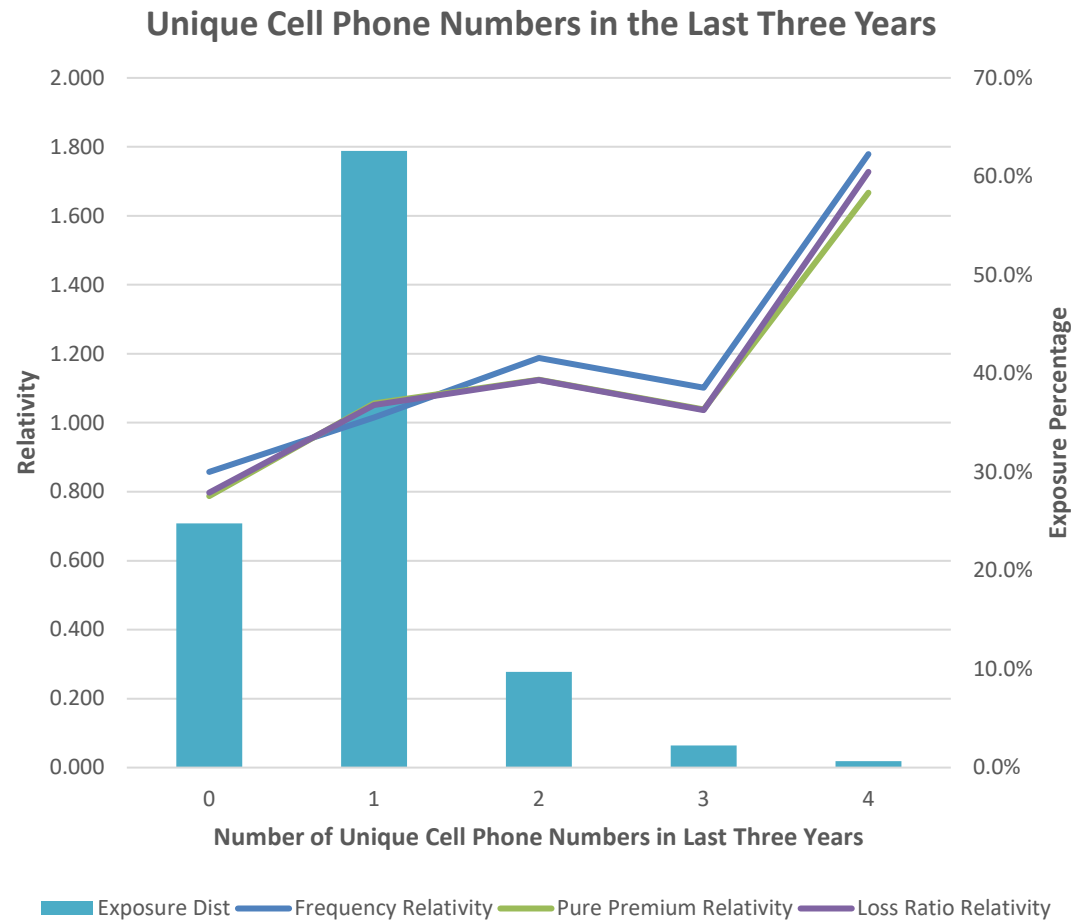
DataX

- ACH debit attempts
- ACH returns
- Active trade lines
- Number of unique addresses
- Application inquiries
- Number of unique bank accounts
- Number of unique cell phone numbers
- Number of unique email addresses
- Number of unique home phone numbers
- On-time payments
- Total charge-offs

NCTUE

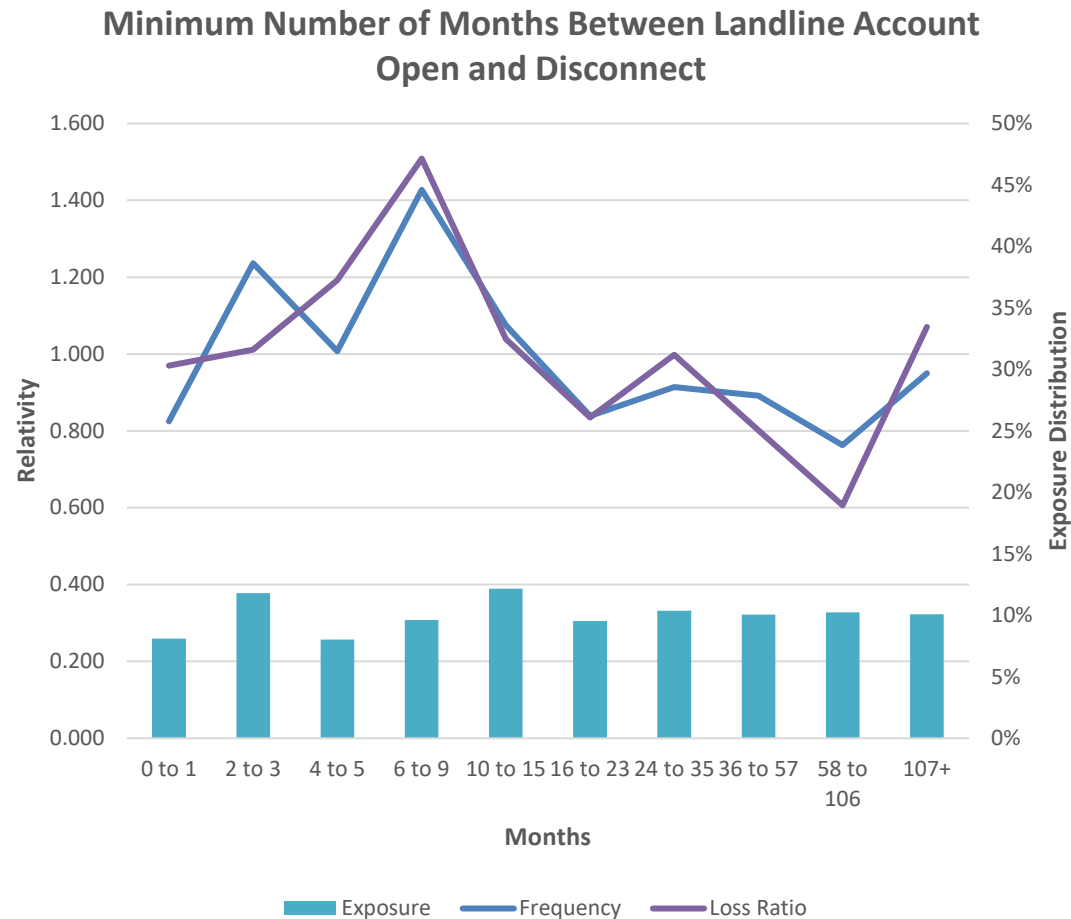
- Total utility balances
- Total charge-offs
- Total derogatory account balances
- Total landline account balances
- Months since most recent account had a current status
- Minimum number of months between connection and disconnection dates
- Months since most recent delinquent pay disconnect

DataX - Unique Cell Phone Numbers



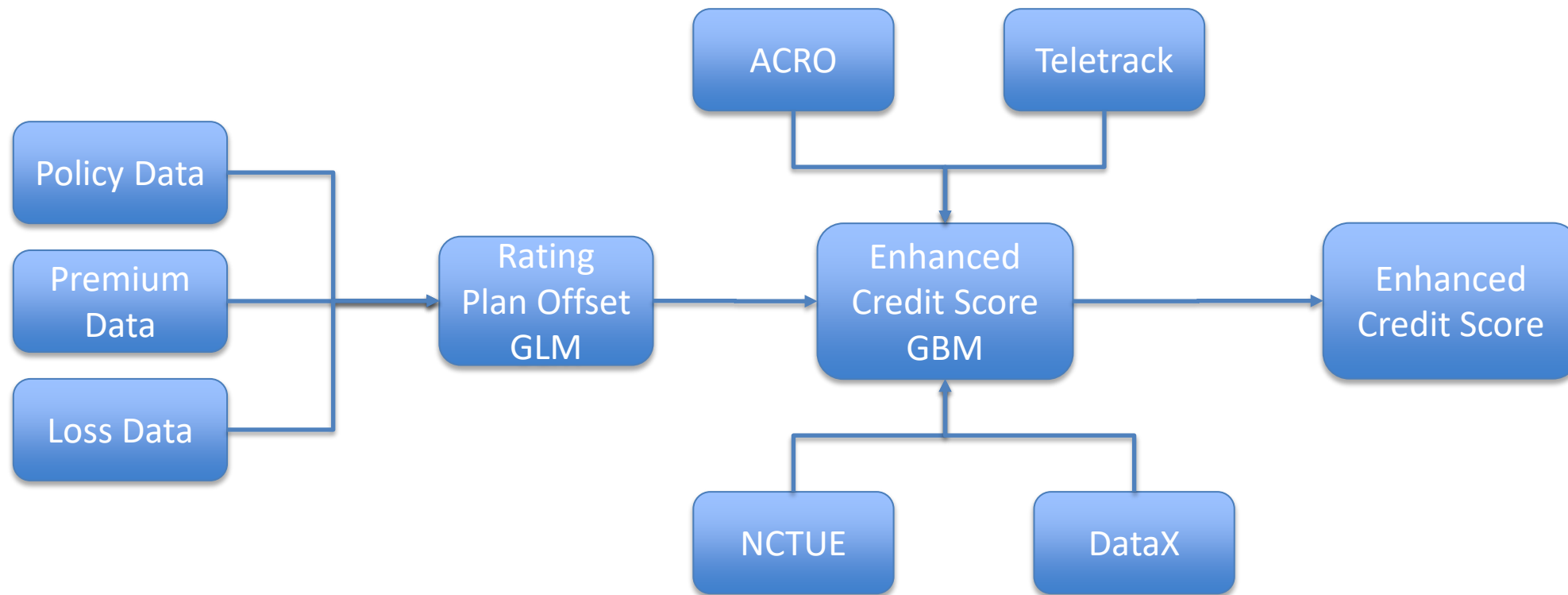
- Approximately 20% of the policyholders had no cell phone number in the last three years, and their experience was 20% better
- As the number of unique cell phone numbers increased, the worse the loss experience
- Can reflect payment history, stability

NCTUE – Months Between Landline Account Open and Disconnect

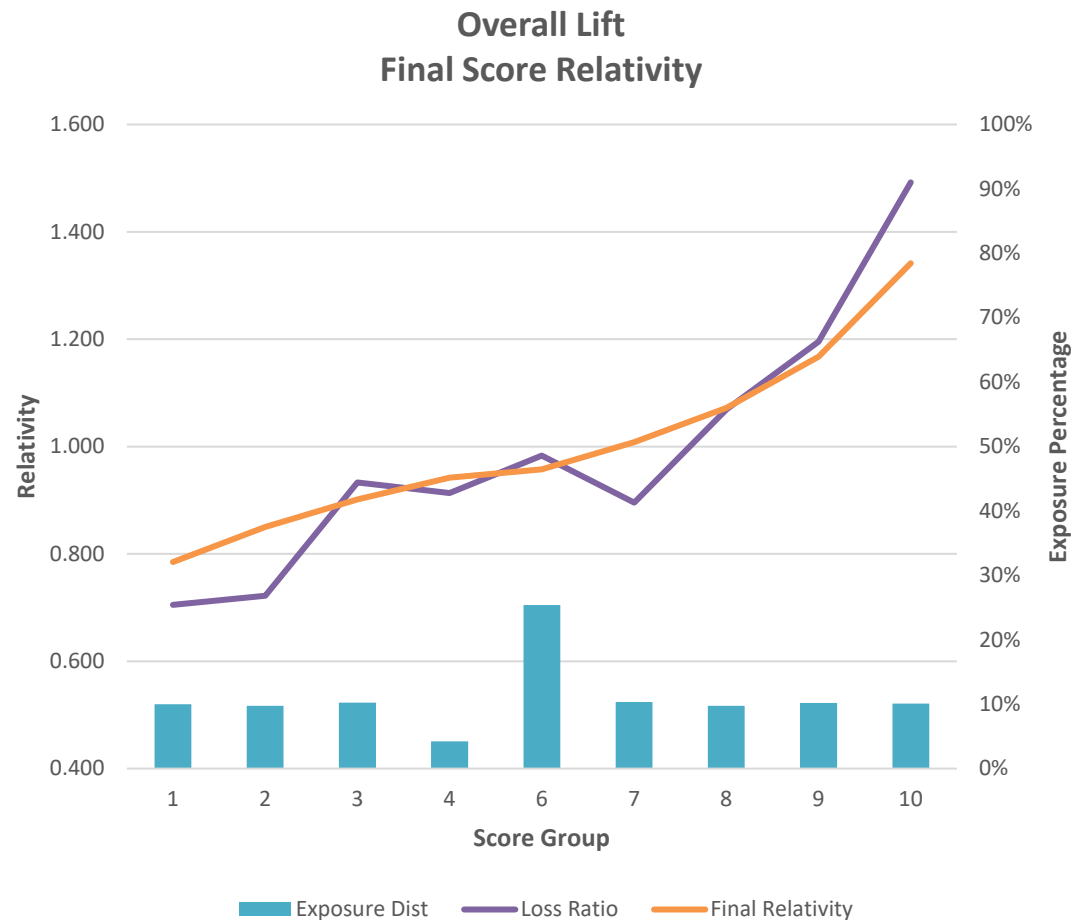


- The longer the time between account open and disconnect, the better the experience
- The sweet spot is around 18 months
- Experience is progressively worse from 0 to 9 months

Enhanced Credit Score Model Development

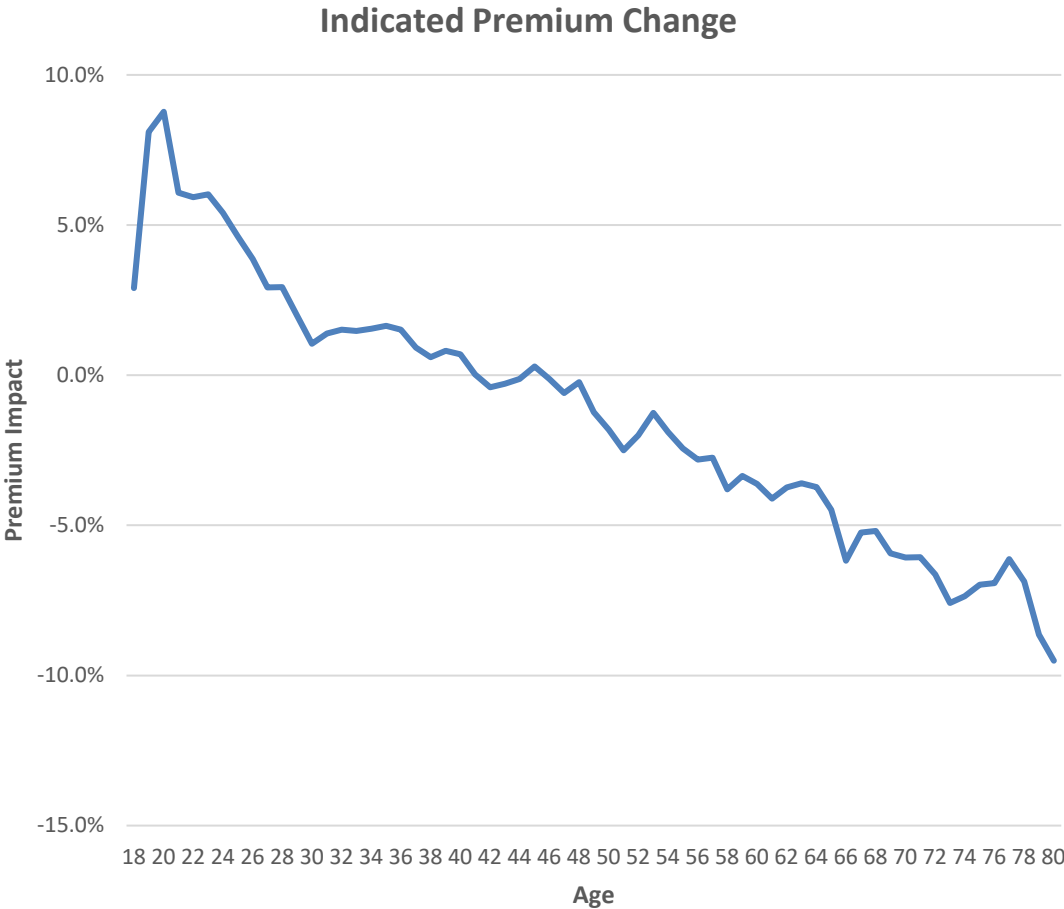
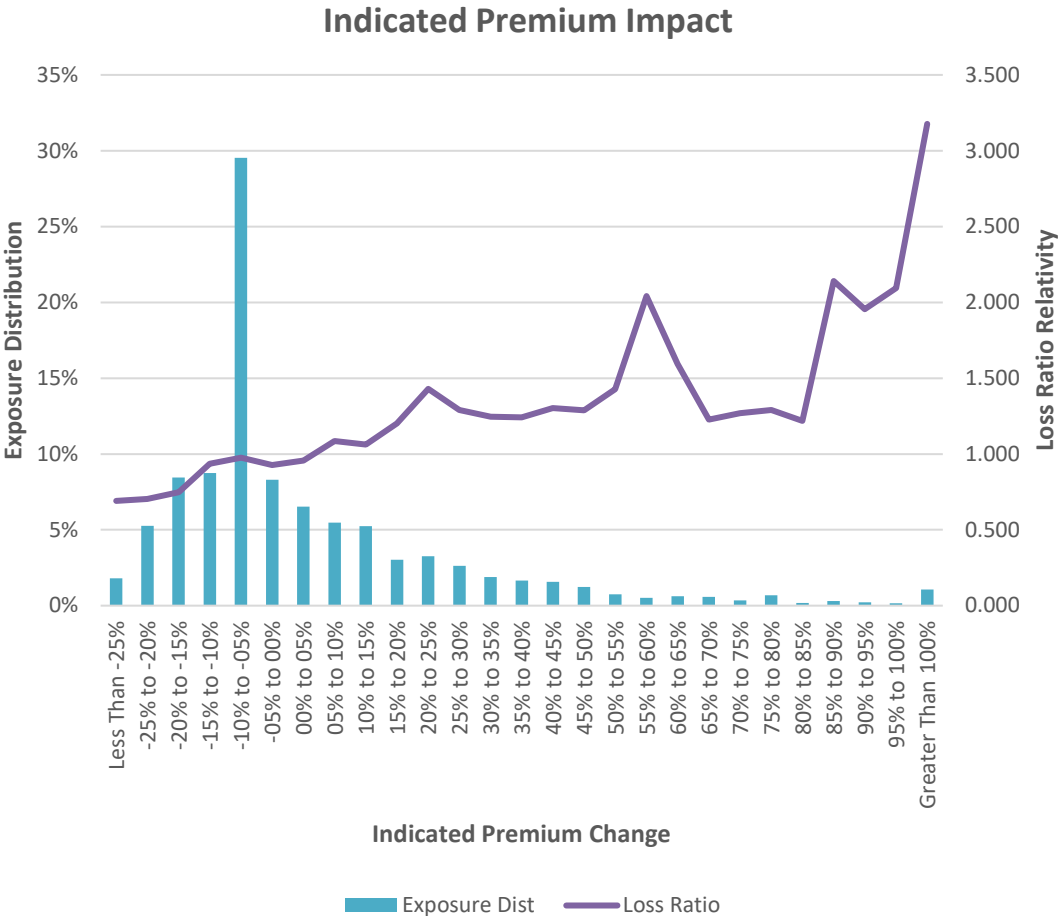


Overall Lift Using Non-Traditional Data



- Loss ratio lift based on the enhanced score is over 2 to 1
- Final GLM relativities controlling for existing rating plan is over 1.7 to 1
- There is significant separation across the range of scores
- Group six is larger as it includes no-hits, no-scores and thin files

Individual Policy Impact Distribution



Fairness Considerations

Test Formulas

1. $Y = \beta_0 + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \epsilon$
2. $Y = \beta_0 + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \beta_4 \cdot P + \epsilon$

Y : outcome variable

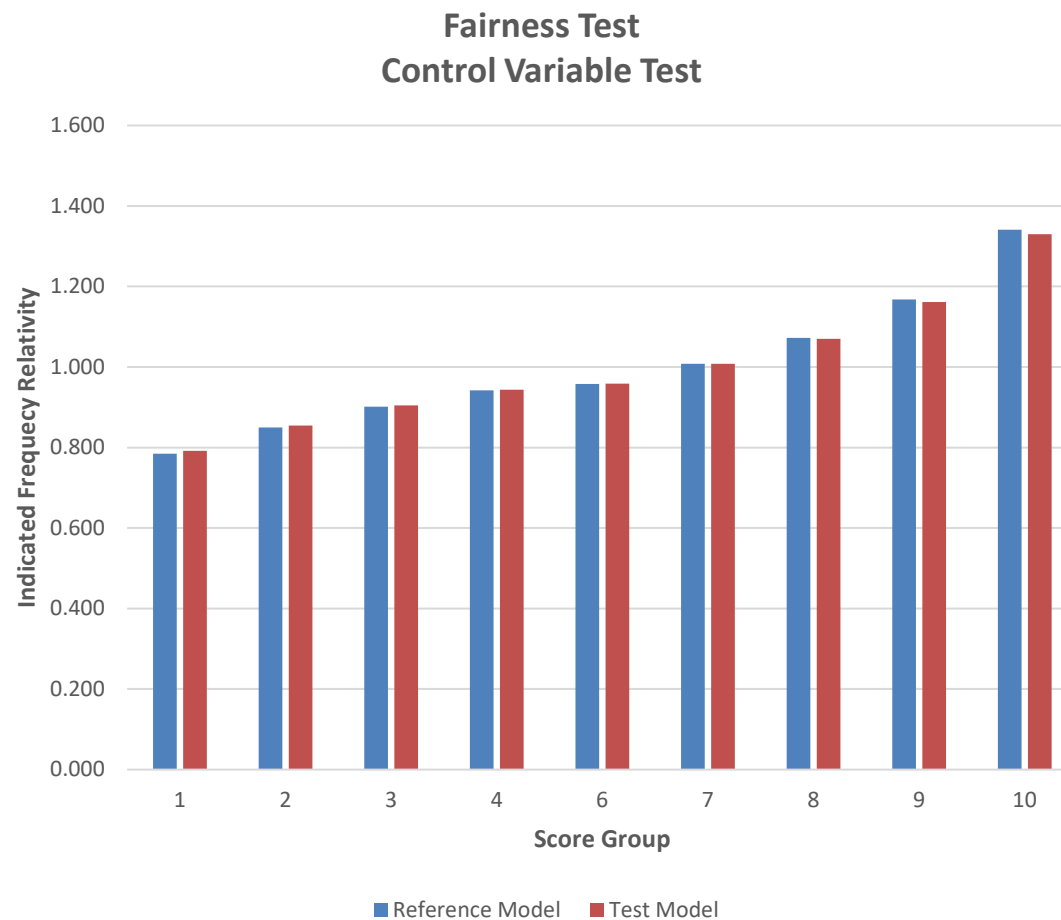
X_1, X_2, X_3 : input variables/factors

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$: model coefficients

P : Variable controlling for protected class

ϵ : random error term

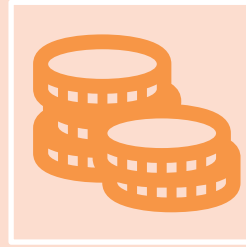
The important thing is to determine whether there is a significant change in β between model 1 and model 2



Analysis of Non-Traditional Financial Data



WHILE TRADITIONAL CREDIT VARIABLES ACCOUNT FOR 60% OF THE PREDICTIVE VALUE, 40% OF THE PREDICTIVE VALUE COMES FROM THE ADDITIONAL DATA SOURCES



THE LIFT ASSOCIATED WITH THE COMBINATION OF CREDIT AND NON-TRADITIONAL DATA SOURCES IS SIGNIFICANT, AND THE INDICATED PREMIUM IMPACTS AT THE POLICY LEVEL IS SUBSTANTIAL



THE USE OF CREDIT AND NON-TRADITIONAL FINANCE DATA DOES NOT CREATE ADDITIONAL FAIRNESS CONCERNS

Thank You!

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