

# Prediction of Delinquent Mortgages

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Jeff Lin  
Vyjayanthi Paravastu





# Objective

Predicting for Delinquent Mortgage (Late payment) in the following month based on previous behavior of borrower

Mortgages purchased by Fannie Mae in 2018.

Delinquent Mortgages can lead to Late Fees and Foreclosures.

Mortgages that are Current can lead to fully paid out loans.



## Data:

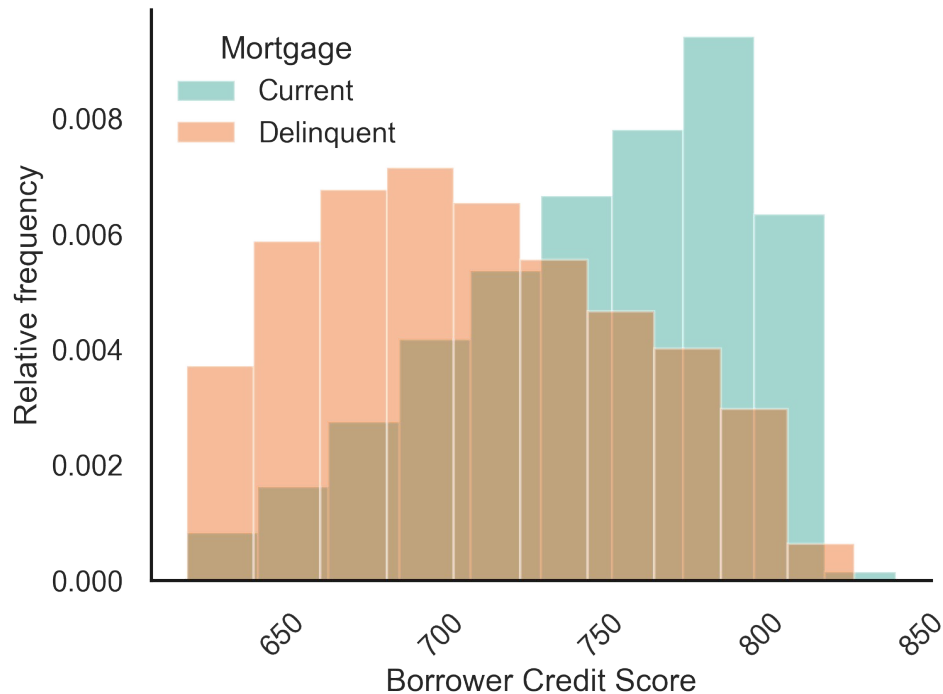
- Total acquisition loans : ~1.6 Million
- Delinquent loans : ~60 K
- Current loans : ~1.54 Million

## Features:

Borrower Credit Score, Interest Rate, Loan to Value, Loan Age, Debt to Income ratio, Unpaid Balance amount, Loan purpose, Original Balance, Borrower Count, Occupancy Type, Months to Maturity, Current Payment Amount

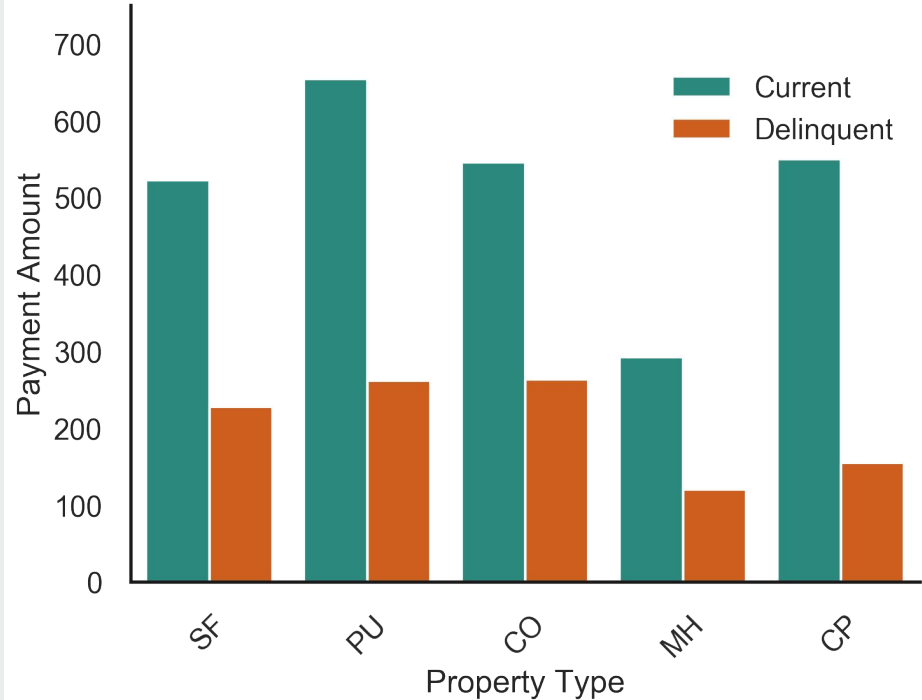
# Credit Score

- Delinquent : 705
- Current : 757



# Payments Vs Property type

- Delinquent : \$ 255
- Current : \$ 560

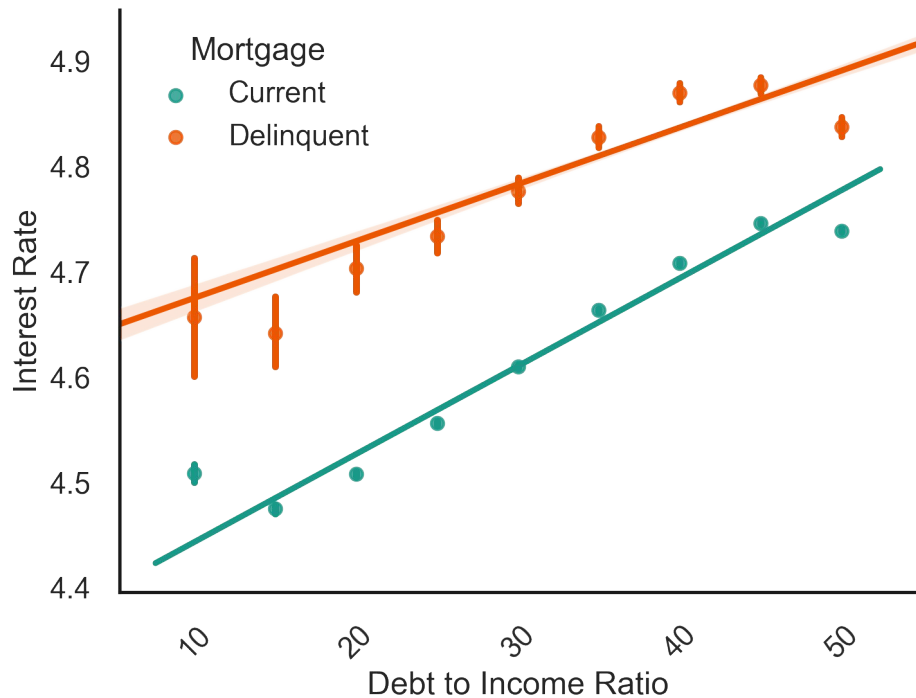


SF: Single Family  
CO: Condo  
CP: Cooperative

PU:Planned Unit  
MH: Manufactured Housing

# Debt-to-Income Vs. Interest Rate

Avg Interest Rate for every 5% of the DTI





# Predicting Loans Delinquency

For a borrower, we can predict with **85%** accuracy whether the mortgage will likely to be Current or Delinquent with the next payment.

Best predictors: Current Payment Amount, Credit Score, Loan Age



## What next?

- Analyze the payment behaviour for previous 2-6 months.
- Include economic features such as Housing Price Index, Unemployment rates, and National Interest rates based on the geographical area.