

Poverty does not belong in civilized human society. Its proper place is in a museum. That's where it will be.

—Muhammad Yunus,

Banker to the Poor: Micro-Lending and the Battle Against World Poverty



What is the Lending Club



Who or what is actually the Lending Club?

The dataset



What data base was used for our evaluation?

The Business Case



Providing potential buyers a model to estimate their interest rate prior application

General Takeaway & Outlook



What general insights can be gained? What good be improved in the future?

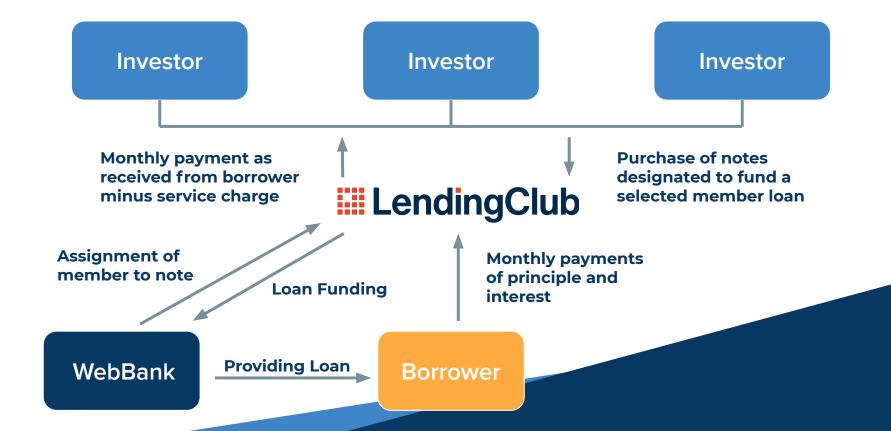
Overview Lending Club

The world largest peer-to-peer lending company, headquartered in San Francisco, California

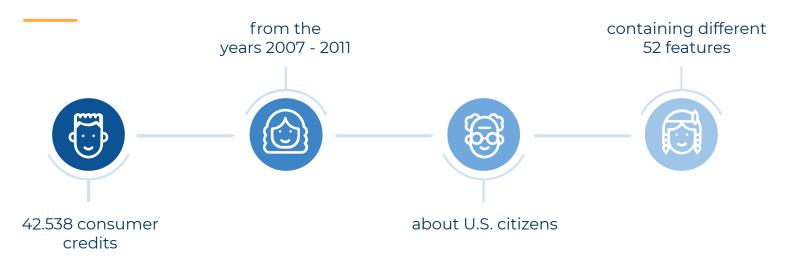




Business Model



The dataset

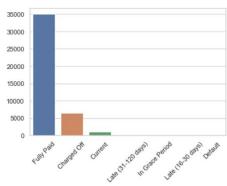


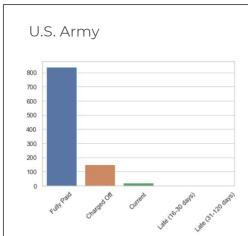


ID: 1075358 City: 972XX Living: Rent Jniversity Medical Group since 1 year 80.000 USD

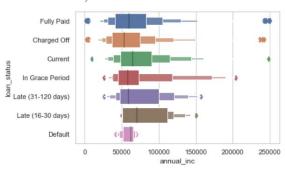
Loan 3.000 USD 60 months Int Rate: 12,69% Earliest reported credit line
T. credit revolving balance
Income verification status
Current status of the loan
Number of bankruptcies

Total

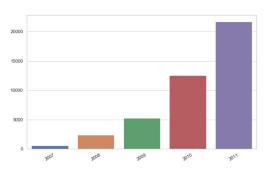




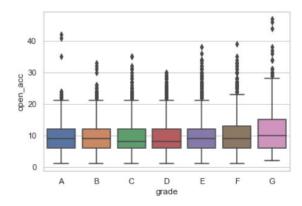
Loan status by annual income



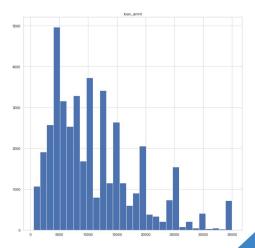
Amount of loans over time



Open credit lines by grade



Amount of loans





Positive

- Easy features engineering
- Only dropping 30 rows
- 23 features required no change
- Plenty of additional data



Challenges

- Dropping seven columns
- Formatting several features
- Missing/ partly unclear Documentation
- Lack of relevant information
- Multicollinearity for some features

Business Case

Situation:

A potential borrower would like to know the interest rate for a loan to compare different offers

Complication:

Loan applications get tracked and included in credit score, which may lead to higher interest rates

Solution:

Providing a model based on Linear Regression to predict interest rates and lower number of loan inquiries

Business Case

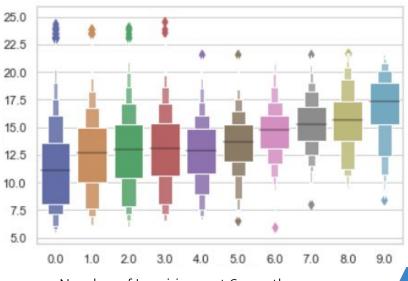
Validation:

Our dataset also supports the assumption that a high number of inquiries negatively impacts the loan interest rate.

But:

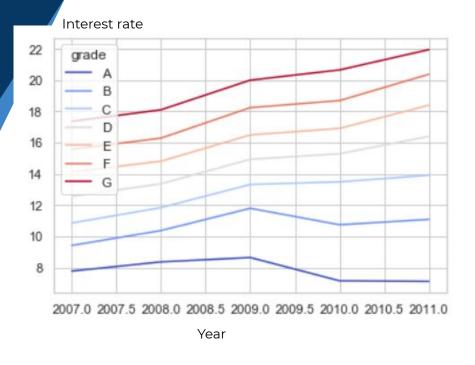
High spread in interest rate may come from other factors also influencing the interest rate

Interest rate



Number of Inquiries past 6 months

Business Case



Interest Rate:

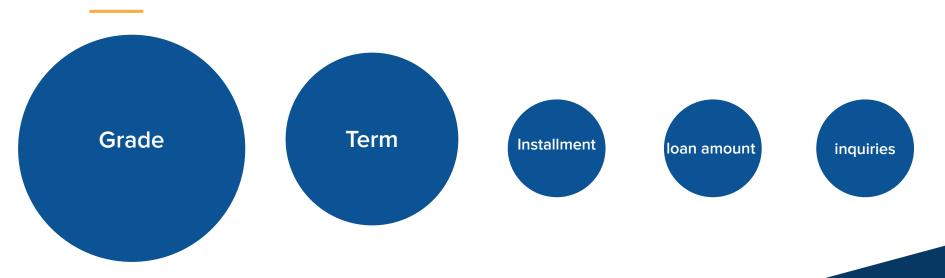
Over time interest rates for lower grades decrease while high risk loans increase over time.

Also grade seems to be highly correlated with interest rate.

Average interest rate best grade A: 8%

Average interest rate worst grade G: 20%

Factors influencing interest rate:







- More frequent credit enquiries can increase the grade and underlying interest rates.
- Choose lowest credit amount possible.
- 3 years loans provide better conditions.
- Verification of your income supports you getting a lower interest rate.



Outlook

- Use the data of the years 2012 2018
- Evaluate the risk premium
- Analysis of the Grade Classification
- Greater integration of developments in global interest rates and the economic situation.

Did you enjoyed the presentation?

Visit our <u>GIT</u> and take a look at the EDA in our jupyter notebooks.