Summary of Loan Data from Proper

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1 Introduction

Prosper Marketplace is a company in California dedicated to the peer-to-peer lending industry. Prosper Funding LLC, operates Prosper.com, a website where individuals can either invest in personal loans or request to borrow money. It is America's first peer-to-peer lending marketplace, with over $7 billion in funded loans.

This data set contains 113,937 loans with 81 variables on each loan, including loan amount, borrower rate (or interest rate), current loan status, borrower income, and many others.

2 Key insights for Presentation

For the presentation we focus on the principal factors that we found that affect the Borrowers APR. We start by plotting the distribution of our principal variable and the we were including the categorical variables to perform a bivariate analysis with the Borrowers APR.

To start we used a violinplot of the Income Range vs the Borrowers APR and the we include a boxgrid with variables ProsperRating, CurrentlyInGroup, IsBorrowerHomeowner and Term by BorrowerAPR. Then since we don't foind the bivariates relations that we expect in some cases we perform a multivariate pointplot first taking Borrower APR across ProsperRating and Term and then Borrower APR across IncomeRange and IsBorrowerHomeowner.

3 Summary

We found a relation between the BorrowerAPR and ProsperRating(Alpha), IsBorrowerHomeowner, IncomeRange and in the case 'CurrentlyInGroup' plots look very similar with the exception that in the case of people that are not in a group the curve is wider than people that are in a group with APR approximatelly 0.35.

- In the case of the variable ProsperRating the category AA have the low borrower APR and the categories HR and E have the highest APR.
- Borrowers with income 100k+ have low APR and the majority of borrowers with income 1-25k $ have high APR.
- We can see differences in the median of APR between Home Owners and Not home owners but this difference is doesn't seem to be significant.

We also found an strong linear correlation between the BorrowerAPR and BorrowerRate.
In the case of LoanStatus we found a relation with BorrowerAPR and LoanOriginalAmount.

- People who defaulted and with charge had more APR in their loans and people who complete and that are about to had low APR.
- Borrowers who have completed their loans have in median loans with low original amount and people with with a current status of loan or a past due status of more than 120 days have in median loans with the highest original amount.

We found interesting relations between CreditScoreRangeUpper and ProsperRating, CurrentlyInGroup and IsBorrowerHomwowner:

- The variable ProsperRating have influence in the Credit Score Range as is expected with the category E with low Credit Score and the category AA with high Credit Score.
- The borrowers that are not on a group have a median of credit score bigger than the ones who are on a group
- Home owners have a median of credit score bigger than the ones who are not.
- For Prosper Ratings of E,D and C the Borrower APR decrease with the increase of the term and for Prosper Ratings of B,A and AA the Borrower APR increase with the decrease of the term.
- The Borrower APR decrease with the increase of the income range with independence if the Borrower is home owner or not, and the borrower APR is low for home owners with income bigger than 25k.
- The Borrower APR is bigger for people that are on a group and have income range between 50k and 75k, and is low for people that are on a group and have income 100k+.