



Feasibility study of credit loan business

Presented by: Evan



Services



Link CC/Debit
Card



Earn points and
rebates



Do Funds
Transfer



Enjoy exclusive
deals



Pay merchants



Track your
transaction
History

Context



Borrower
Demand



Lending Club
Platform



Investors
Supply



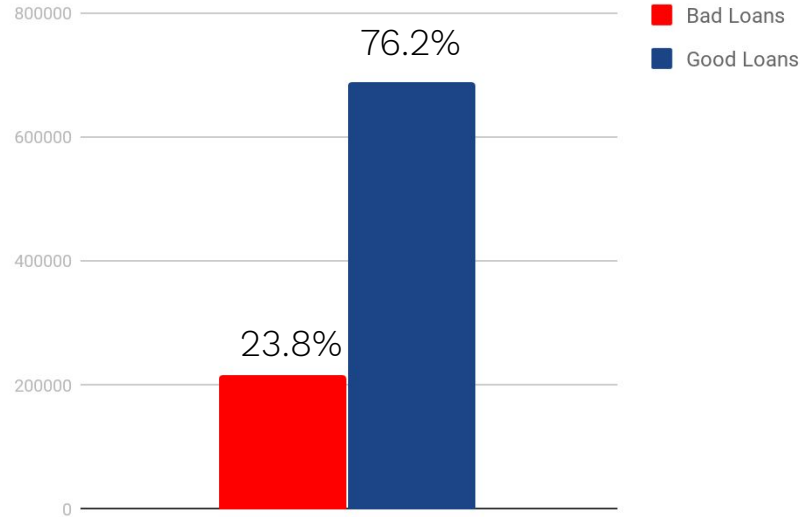
Approved Loan

- P2P lending platform
- Screening
- Risk diversification
- Incentive to increase transaction volume by increasing risk tolerance

Dataset



Proportion of loans

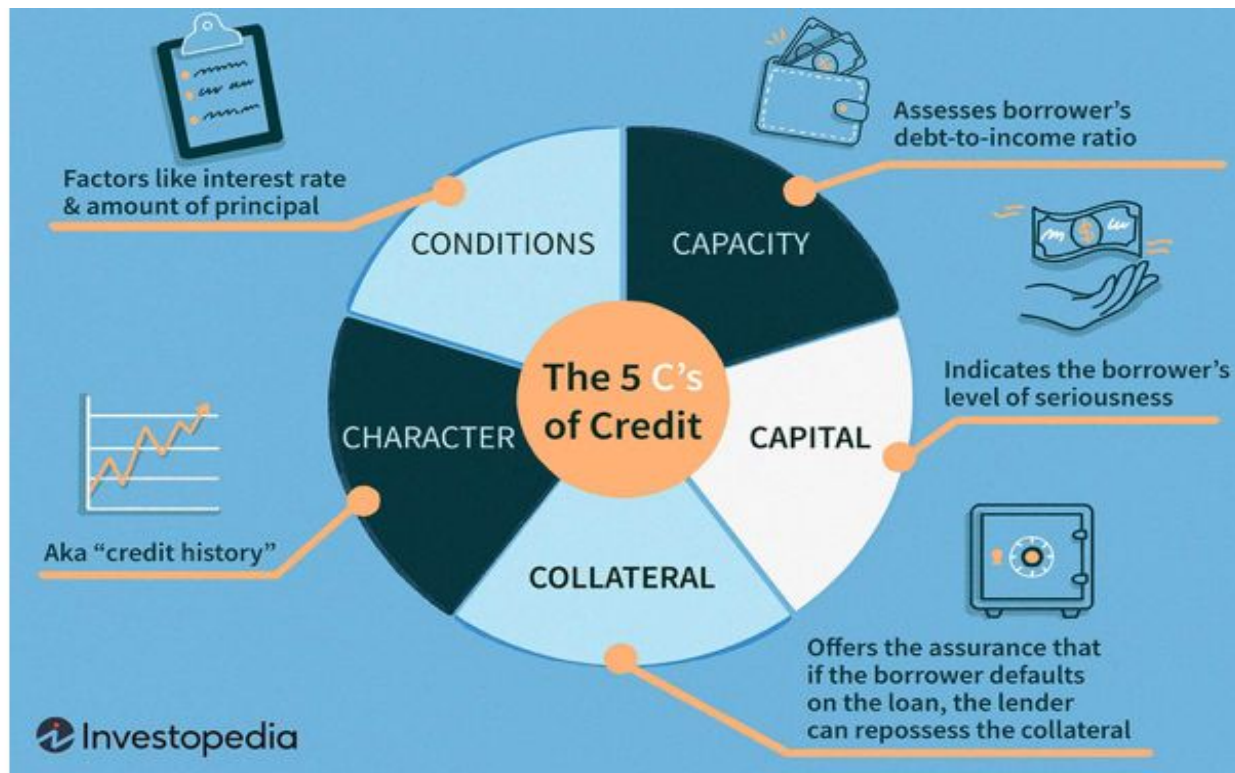


- Conservative
- Time period
- Size of dataset
- Filtered irrelevant data



Limitations

- Feature constraints
 - Fixed terms
 - Capture macroeconomic conditions, behavioural, FICO score
- Huge dataset
- Need to satisfy regulatory compliance

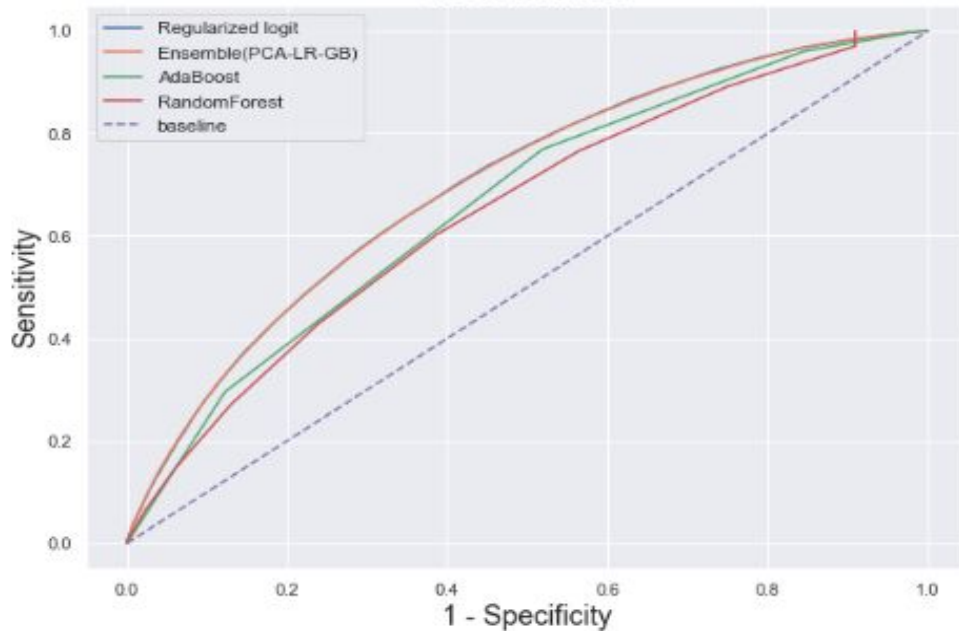


Alison Czinkota (Copyright) Investopedia, 2019.

Model score

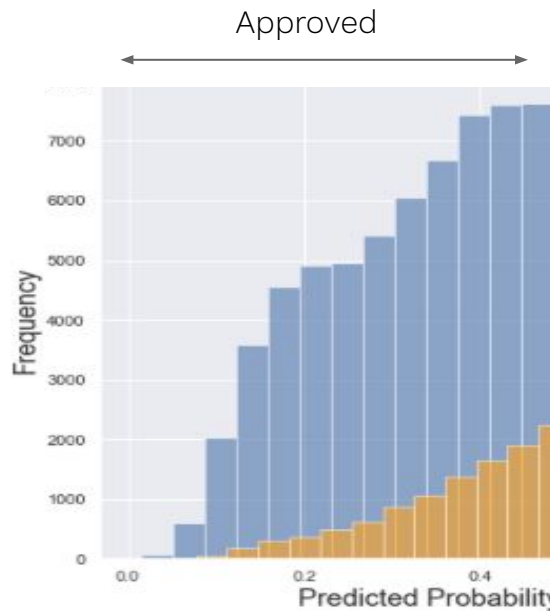


ROC Curves



Model	ROC-AUC	Recall
Regularized Logit	0.701	0.66
Ensemble	0.701	0.66
Adaboost	0.68	0.55
Random Forest	0.64	0.27

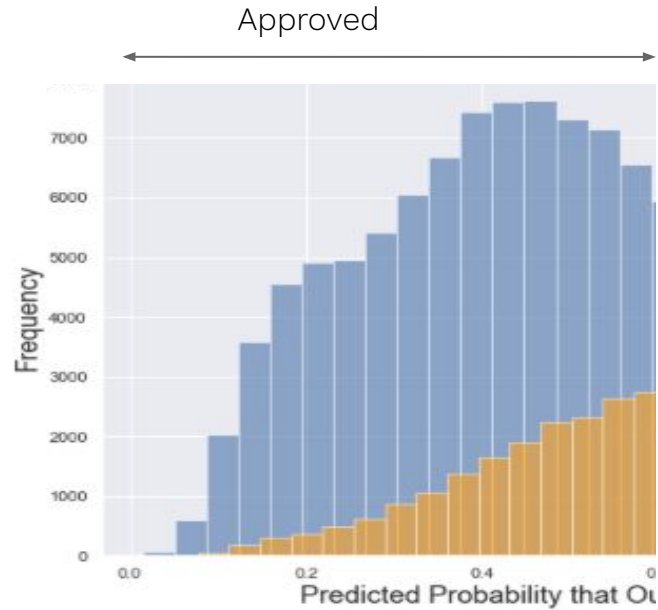
Model



Business as Usual

	103
	32

Model





Business as Usual

	103
	32



Value of loan

 *Annual Percentage Rate (APR) * years*
** loan amount*

Term	36 month	60 month
APR / %	12.2	16.7
Loan (Amount)	13.4	21
Loan (Number)	528	162
Value / \$		7870



\$292,200,000

Business as usual



\$171,400,000

Model at 0.5 threshold



41.3%

Revenue drop



\$292,200,000

Business as usual



\$434,300,000

Model at 0.6 threshold

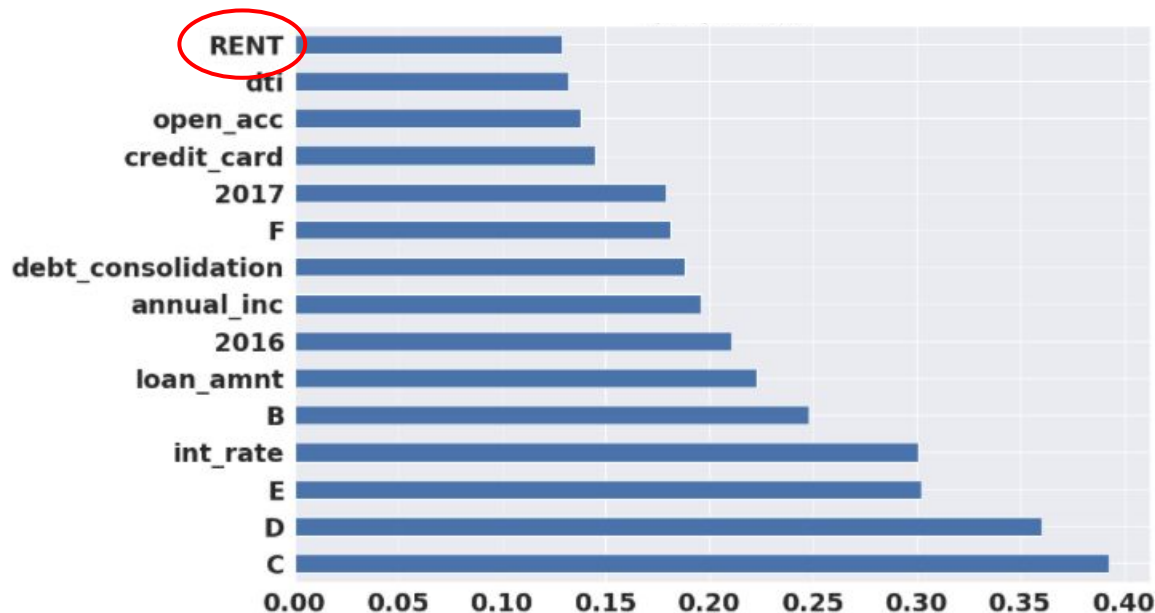


48.6%

Revenue rise



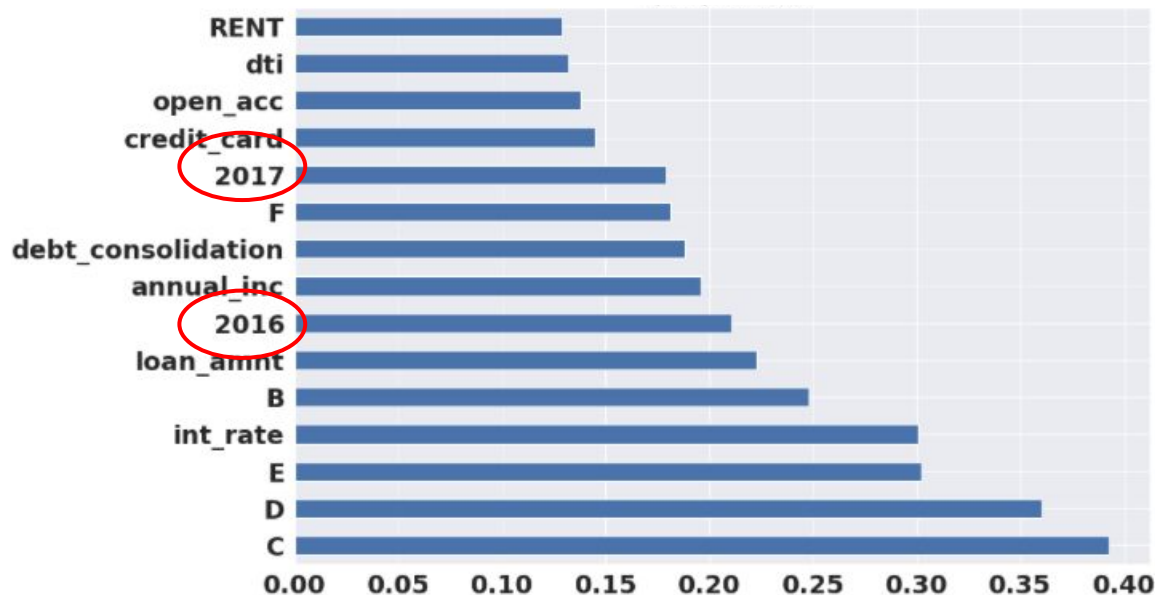
Feature Importance



- Home Ownership
- Year
- Credit features
- Grade
- Loan Purpose



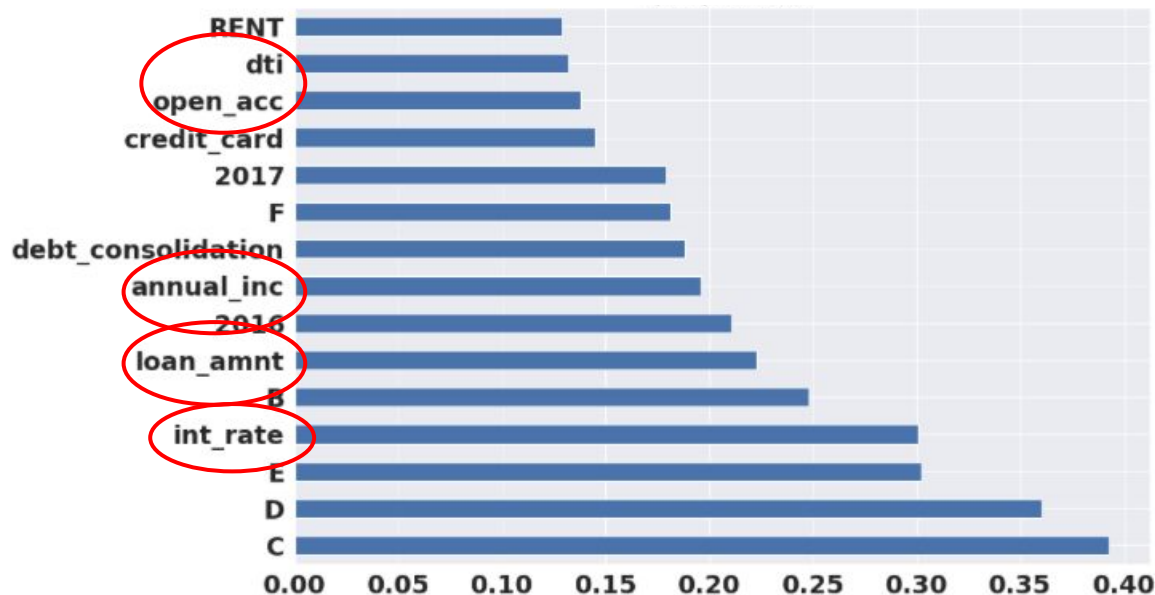
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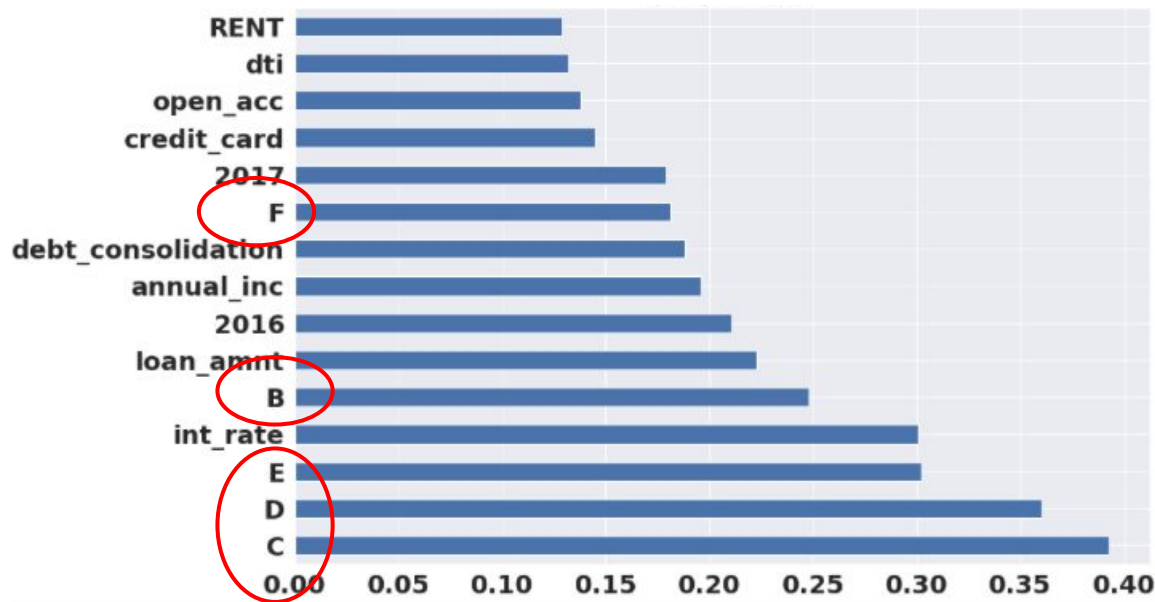
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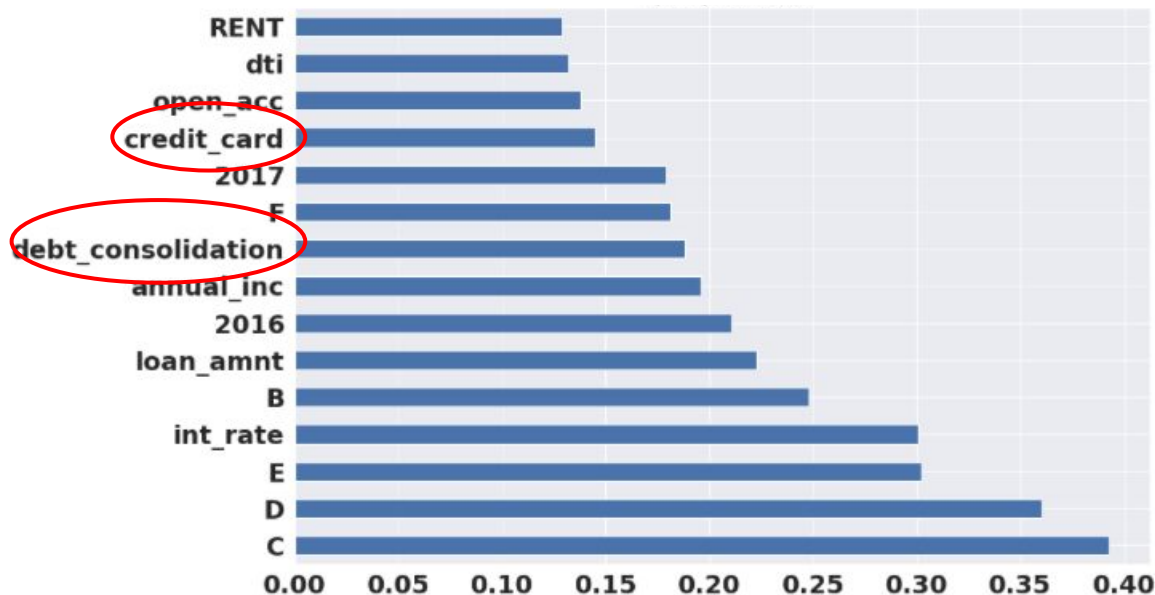
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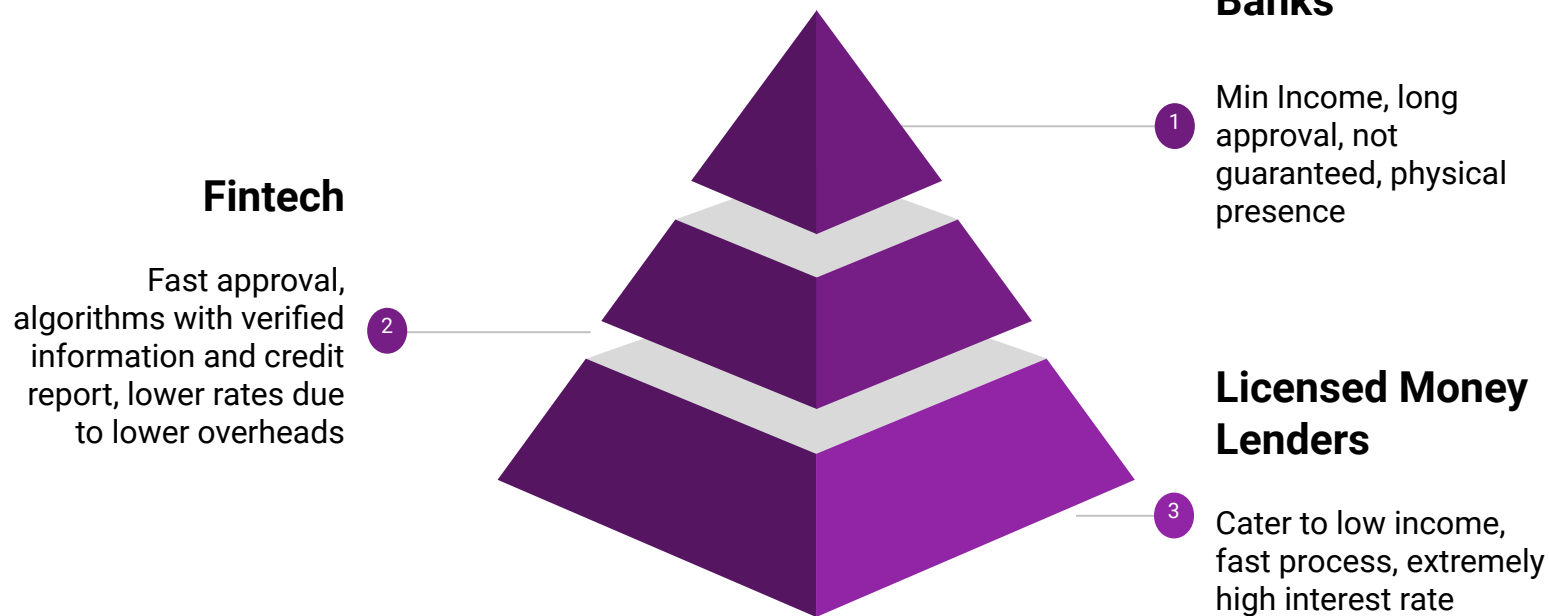
Feature Importance



- Home Ownership
- Year
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- Loan Purpose



Target market

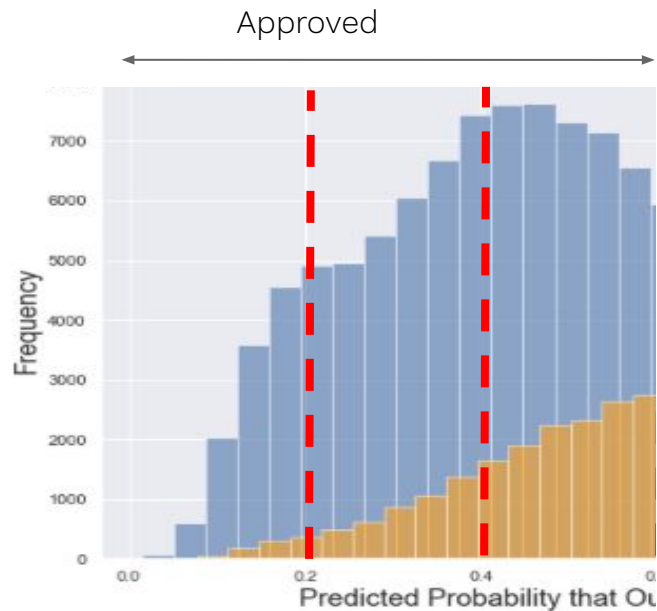




Credit terms

- Loan Tenure: 36 months
- Loan Interest(monthly): 0.8%, 0.9%, 1%
- Origination fee: 1%
- Fixed late payment fee: \$60
- No early payment penalty
- Up to 6x monthly income

Risk bands



Loan Interest(monthly):
0.8%, 0.9%, 1%

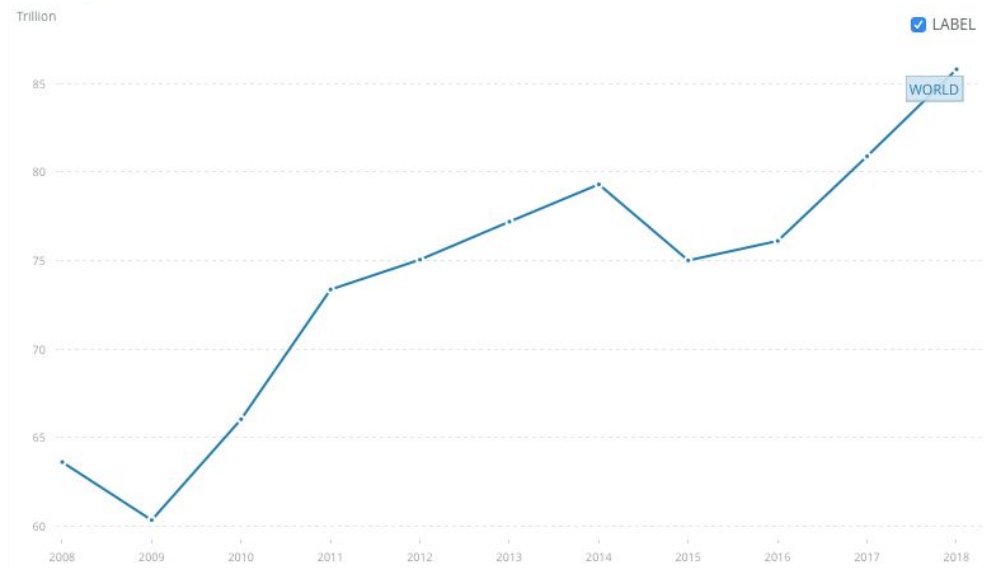


Conclusion



EDA

- Issuance of loans by year
- Loan conditions by different income groups
- Assessing risks using dti, and employment length
- Loan grades on interest rates
- Home ownership on loan amounts
- High interest rate -> higher default -> also tend to be longer term



Workflow

- Most correlated features
- Features from domain knowledge
- Creation of new column
- Convert to suitable data type

