

Project AstraZeneca Lending

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Why?

- We want to do more for our patients and provide needed financial aids
- Create incentives for patients to choose AstraZeneca

Is It Economically Feasible?

- **Capabilities:**

- Lending funds range from \$800,000 to \$1,000,000 total

- **Goals:**

- Provide \$2,000 - \$4,000 loans with 1 year maturity
- Lending incomes $>$ lending losses

Studies

- Use lending data from the personal loan industry (Lending Tree) to make decisions
 - 5 years worth of loans (2016 – 2020)
 - Sample size 1666
- **Findings:**
 - Average of 2.5% default rates
 - Effective risk measurement features/constraints
 - Expense vs. earning ratio (20% - 30%)
 - Income (\$75,000)
 - Job security (average 3 yrs and up)
 - Credit score (720,760+)
 - Loan amounts (\$2000,\$4000)
 - 1 year maturity
 - APR 16%

Expected Return

- **Desired outcome:**
 - Positive expected returns
- Expected Loss = Sum (Probability of Default * Loss)
- Expected Gain = Sum (Probability of No Default * Interest Income)

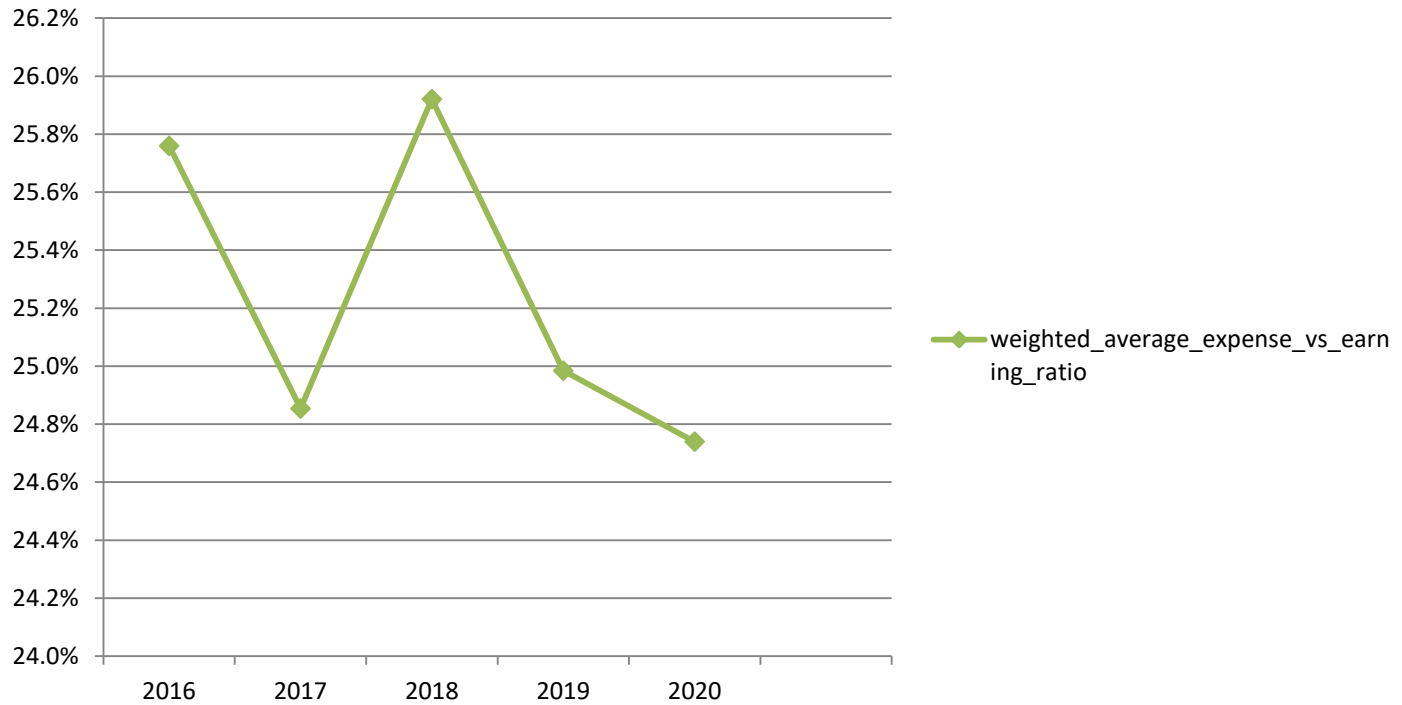
Year	Sum Of Projected_Loss	Sum Of Projected_Gain	Expected Earning
2016	473,430.67	84,712.54	70,758.96
2017	461,274.17	83,626.59	70,004.07
2018	458,893.75	84,381.17	70,799.29
2019	456,320.08	84,345.13	70,828.50
2020	463,351.50	83,295.06	69,628.89

Measuring Lending Performance and Assessing Risks

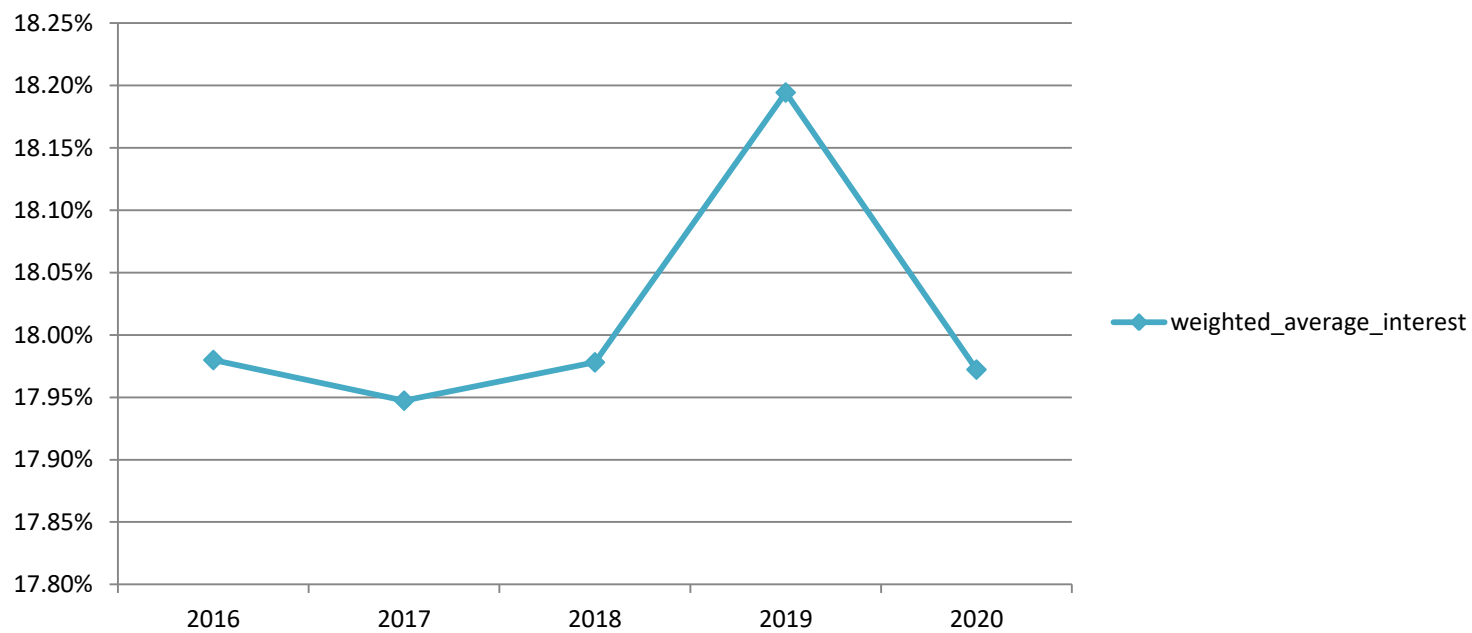
- Employ ratio tests to monitor if loans' features divert from desired thresholds

	Min Thresholds	Max Thresholds	2016	Result	2017	Result	2018	Result	2019	Result	2020	Result
Sum Of Loan_Amount	800,000	1,000,000	1,010,608	FAIL	999,501	PASS	1,006,779	FAIL	994,175	PASS	994,131	PASS
Weighted_Average_Interest	16.00%	N/A	17.98%	PASS	17.95%	PASS	17.98%	PASS	18.19%	PASS	17.97%	PASS
Weighted_Average_Employment_ Time (Yrs)	3.50	N/A	3.98	PASS	4.05	PASS	3.99	PASS	4.04	PASS	3.96	PASS
Weighted_Average_Credit_Score	720	N/A	754	PASS	755	PASS	754	PASS	755	PASS	756	PASS
Weighted_Average_Earning	75,000	N/A	85,685	PASS	84,729	PASS	84,448	PASS	84,144	PASS	84,612	PASS
Weighted_Average_Expense_Vs_E arning_Ratio	N/A	30.00%	25.76%	PASS	24.85%	PASS	25.92%	PASS	24.98%	PASS	24.74%	PASS

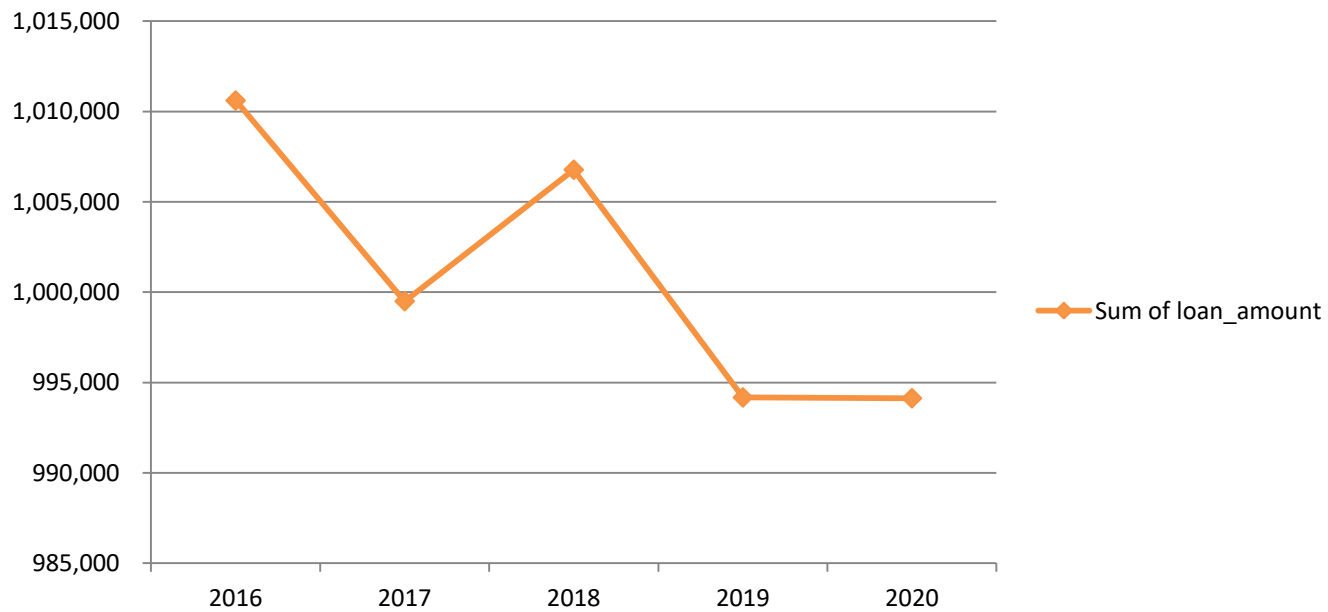
Weighted Average Expense vs. Earning



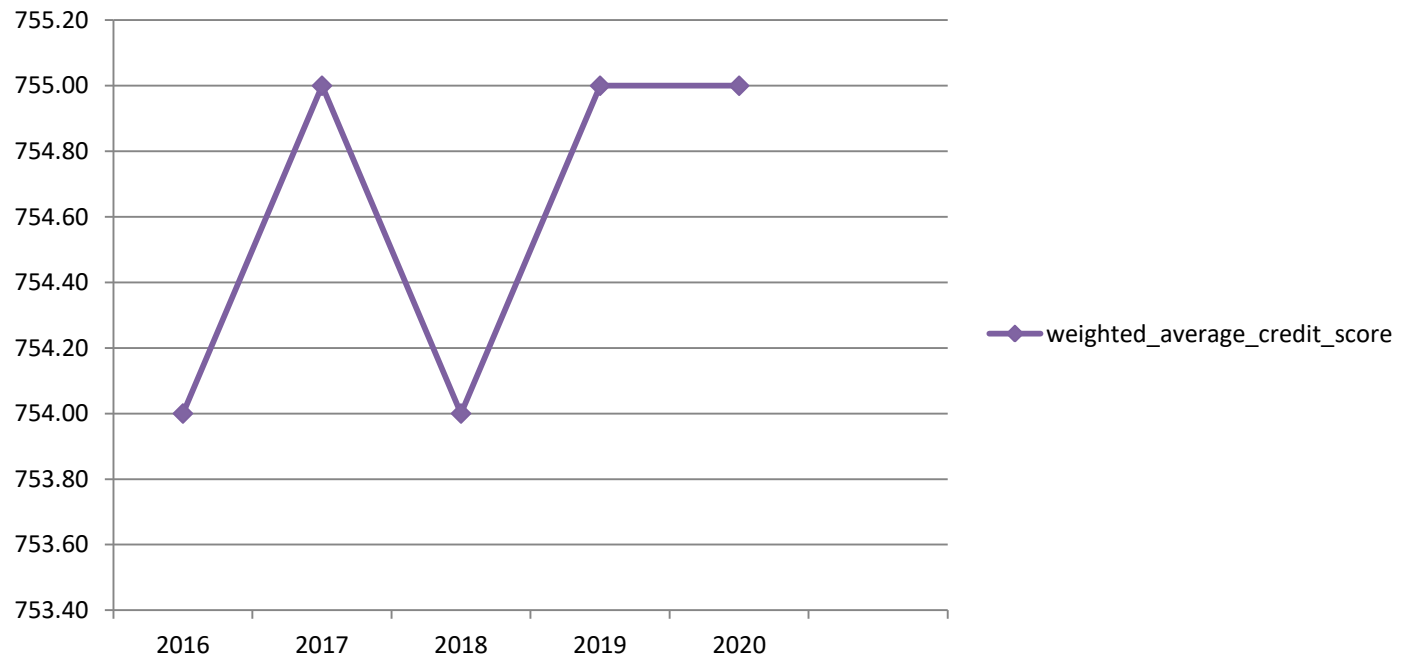
Weighted Average Interest (%)



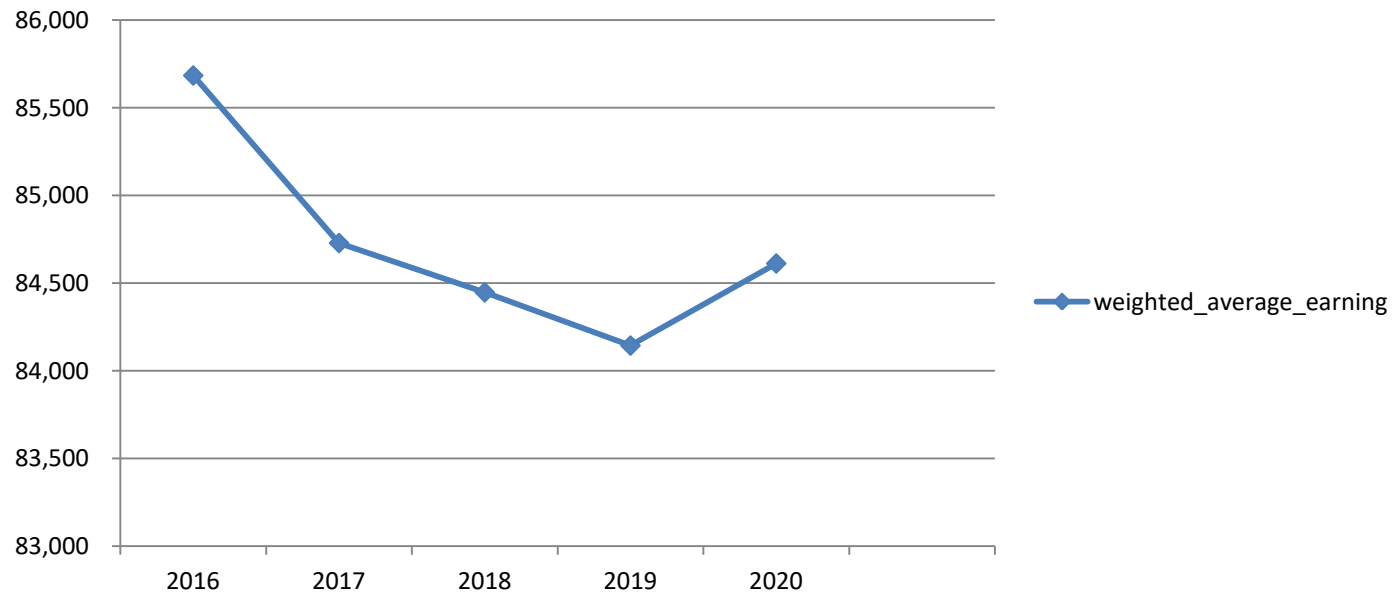
Sum of Loan Amount (\$)



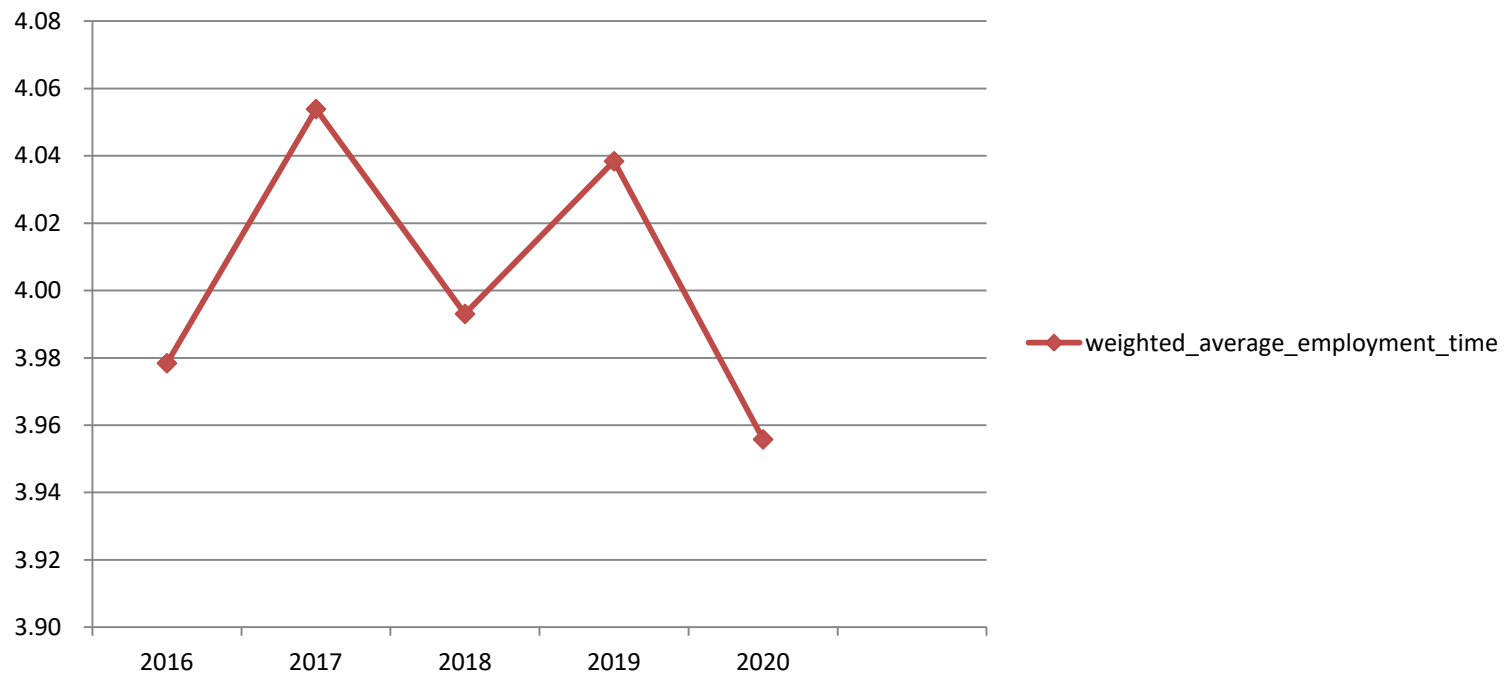
Weighted Average Credit Score



Weighted Average Earning (\$)



Weighted Average Employment Time (Year)



Conclusion and Additional Research Questions

- Project appears economically feasible
- Should we further research and factor in operating expenses & limitations?
- How should we improve the sample for accuracy?
- Additional performance metrics that need to be added?