



# Getting a Degree Without Debt

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JANET CARSON



METIS



# The Student Loan Crisis

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- ▶ Americans owe over 1.5 trillion dollars in student loan debt
- ▶ College graduates with student loans are
  - ▶ More likely to work two or more jobs
  - ▶ Less likely to say they are living comfortably
- ▶ You're a high school guidance counselor, what do you tell families?



# US colleges offering four-year programs

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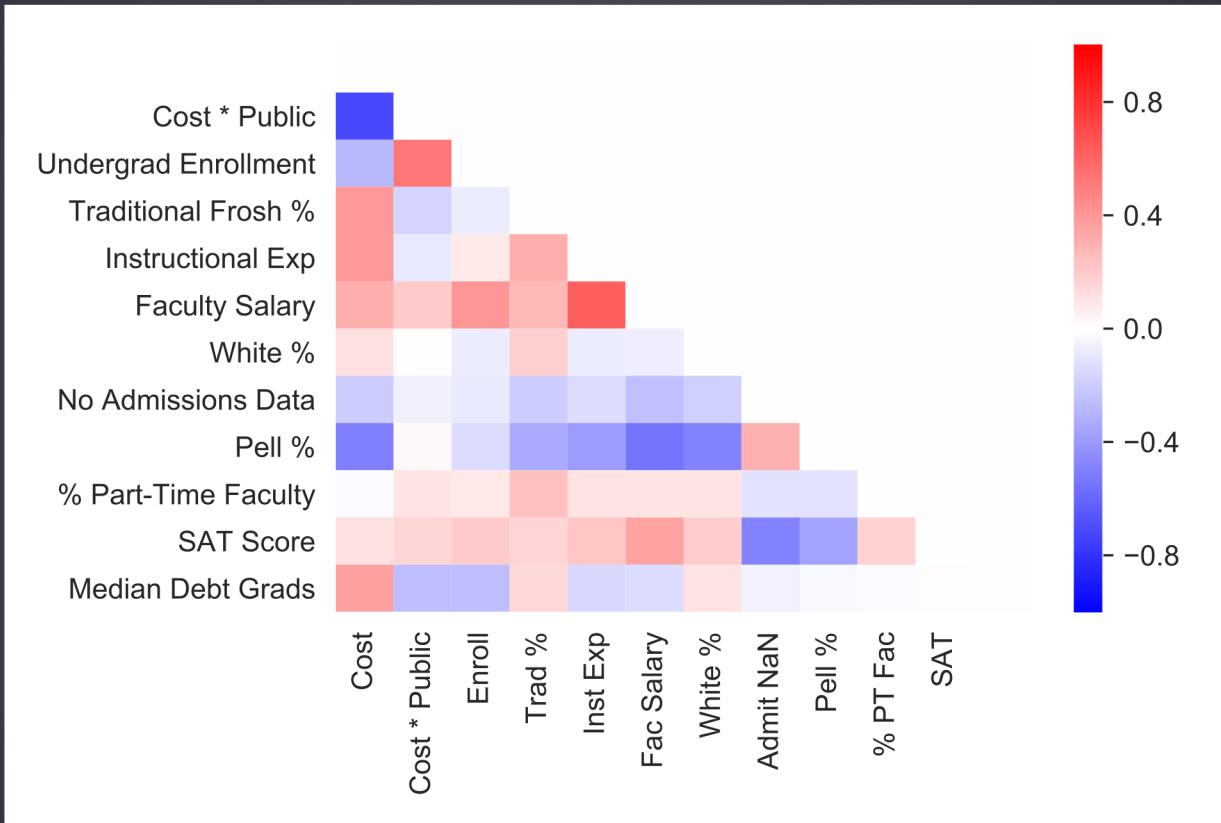
## College Scorecard

- ▶ 1604 Institutions
- ▶ Almost 2000 potential features to choose from
- ▶ Target variable: Median debt at graduation

## Collegedata.com

- ▶ Scraped 1794 colleges
  - ▶ Percent of parents getting PLUS loans (about 1000 nulls)
  - ▶ Financial aid methodology (140 null, only 64 IM)
- ▶ Future work

# Features





# Results

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## Cross Validation Stage

- ▶ RidgeCV  $R^2 = .3413$
- ▶ LassoCV  $R^2 = .3415$

## Strongest Positive Coefficients

- ▶ Cost
- ▶ Cost \* Public interaction variable
- ▶ Intercept = 23,000

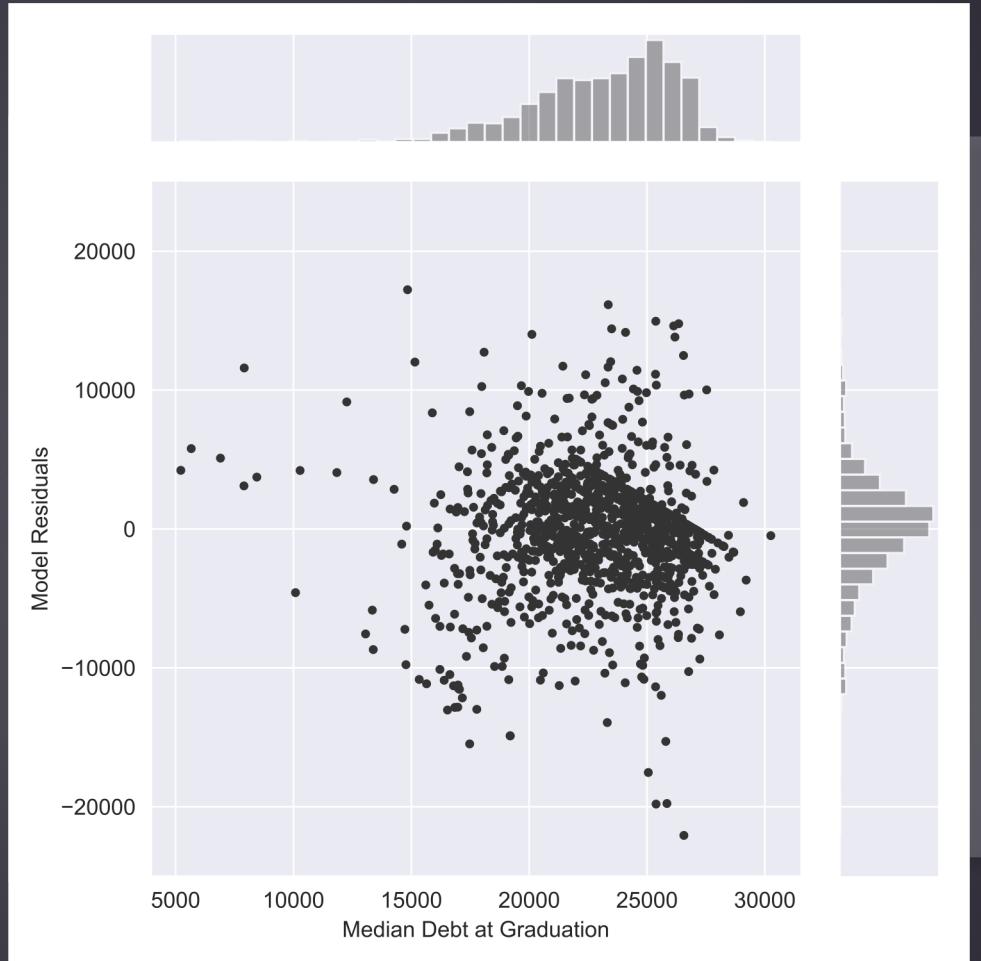
## Testing Stage

- ▶ RidgeCV  $R^2 = .3235$
- ▶ LassoCV  $R^2 = .3240$

## Strongest Negative Coefficients

- ▶ Institutional Expenses
  - ▶ Average Faculty Salary
  - ▶ Instructional Expenses per FTE

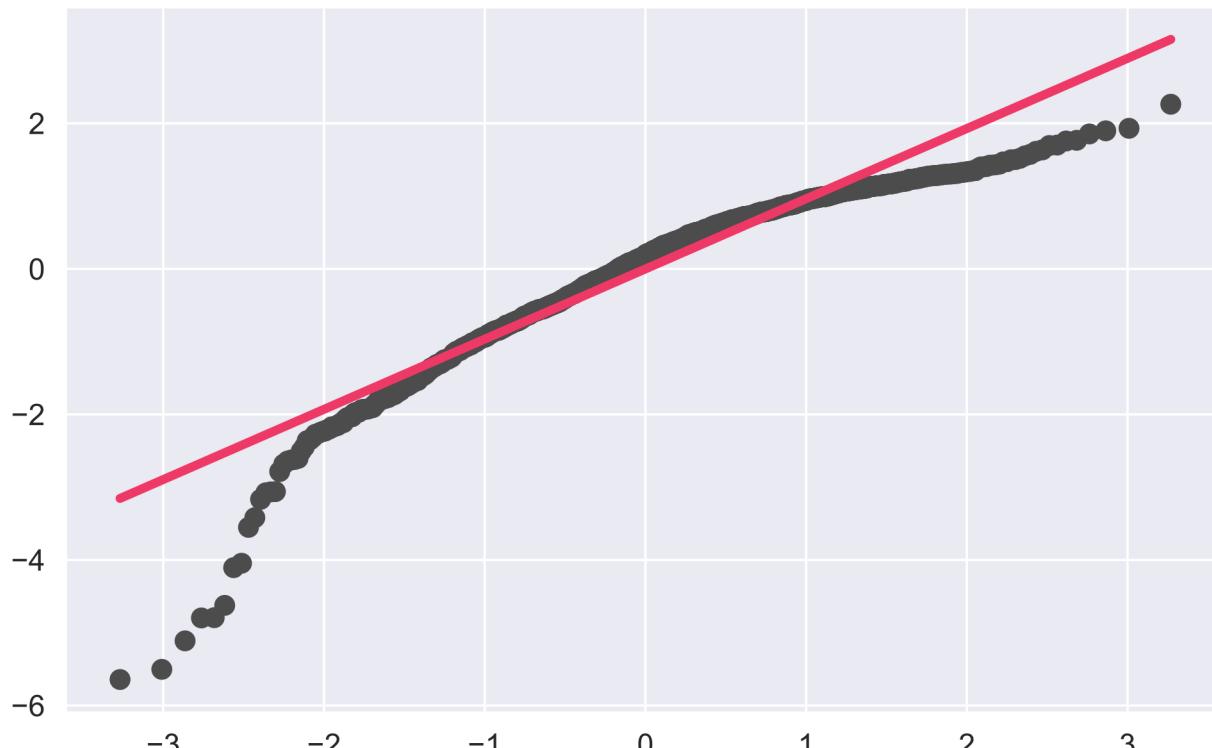
# Residuals





# QQ Plot

Normal Q-Q plot





# Thank You

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ANY QUESTIONS?





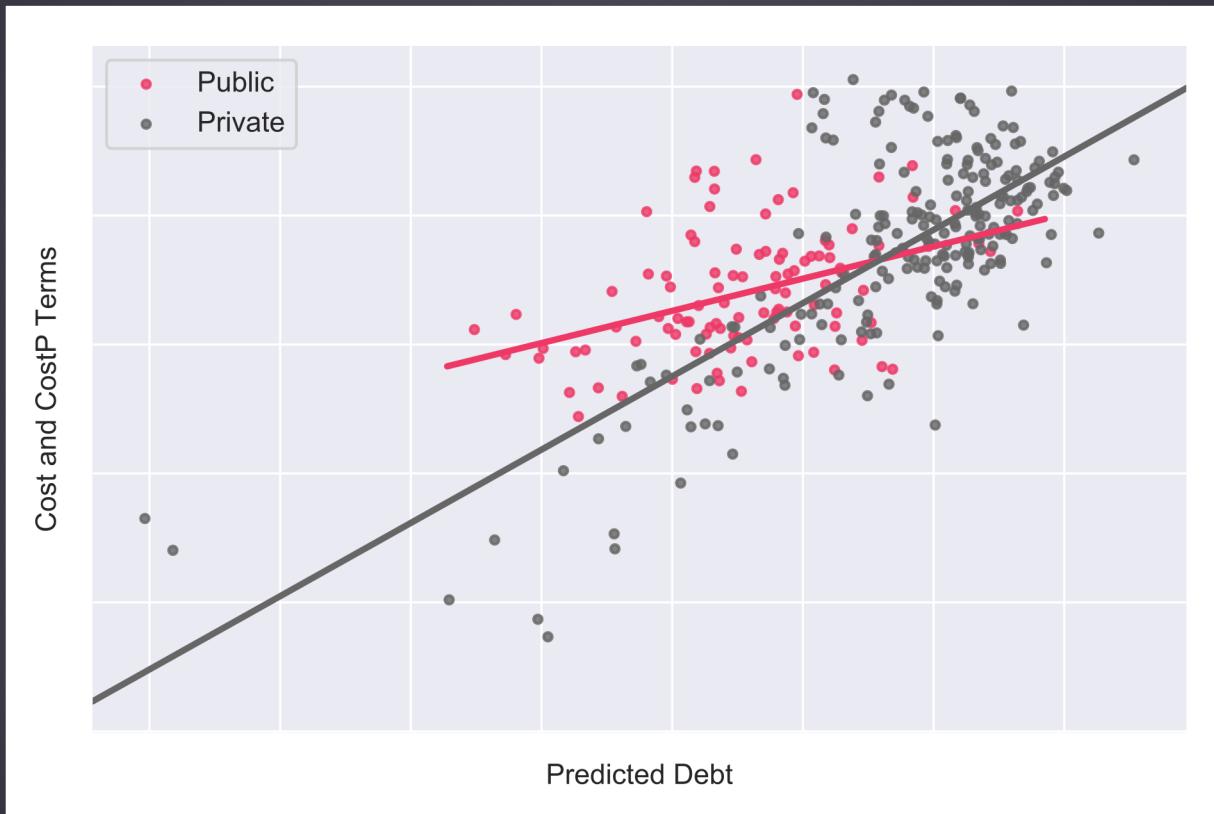
# Appendix

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# Cost – Public/Private Interaction





# Distribution of Target Feature

