Optera Scope 3 Emissions Modeling

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Contents

Project Focus

- Considerable variation in number of companies and values reported in different sectors
- Identified top 5 "focus sectors" based on emissions in Categories 1 and 11:
  - Highest emissions values
  - Highest # companies reporting
  - % of total companies in sector reporting
- Focus Sectors:

Chemicals

Electrical & electric equipment

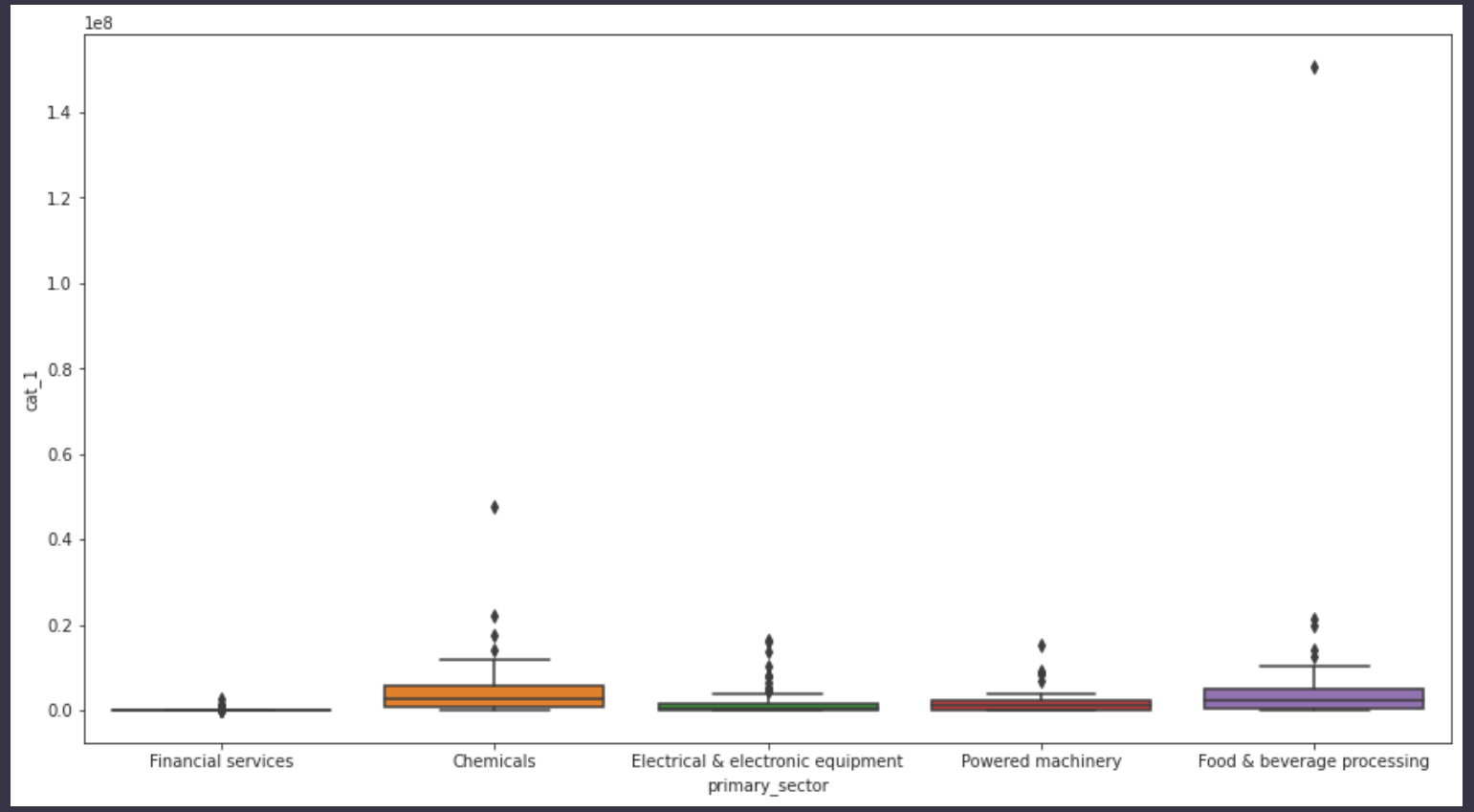
Financial Services

Food & beverage processing

Powered Machinery

Analysis:

Not all sectors are created equal



Challenges

REVENUE MATCHING

DISTRIBUTION SPREAD/OUTLIERS

Proposed Solution: Binning

Predict whether a company will fall into a range of values

- Explore classification model approaches

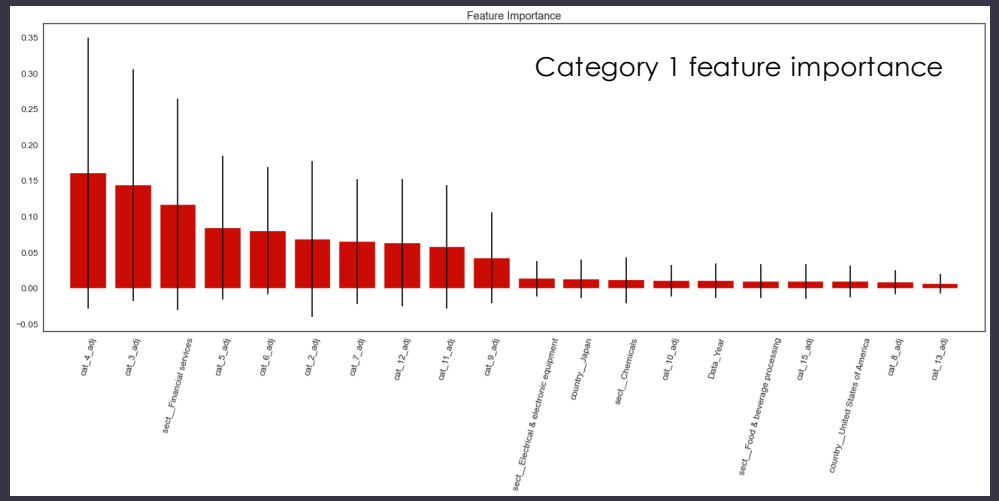
Binning approach: balanced distribution with clear "zero" bin

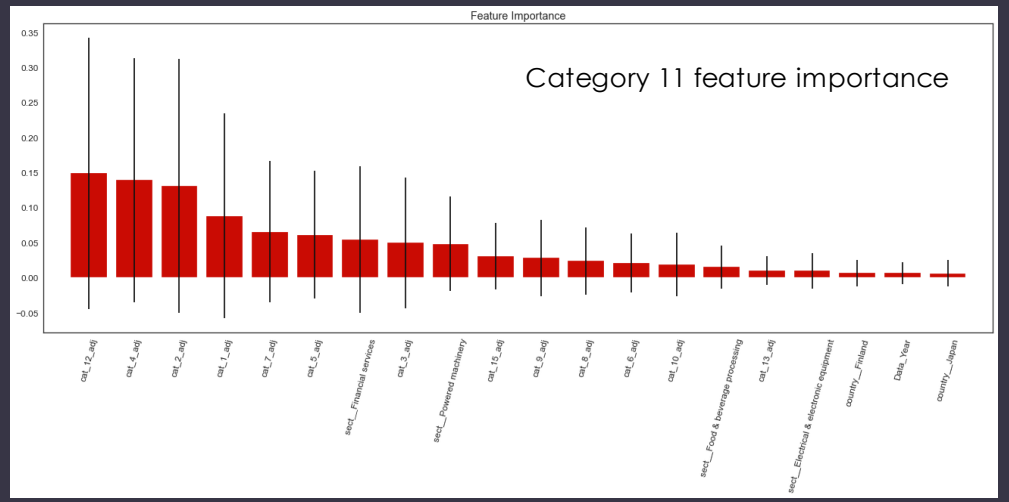
Ranges used (category emissions per $1 million in revenue)

- 0
- < 50 MT per million
- <250 MT per million
- 250 MT per million or more

Results

- Some promise for both Category 1 and Category 11 (60-75% accuracy depending on category/test set)
- Some issues (variation in train/test sets; small data size, de facto paired samples)
- 2021 data alone fits better; definite differences





Recommendations

More Data

- Incorporate pre-2020 data if available
- Find ways to match more companies to revenue data

More Predictors

- Explore impact of Scope 1 and Scope 2 values
- Other company characteristics (e.g., employee headcount, publicly traded)

Thank you

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