

Identifying High Duration Unemployment Insurance Beneficiaries

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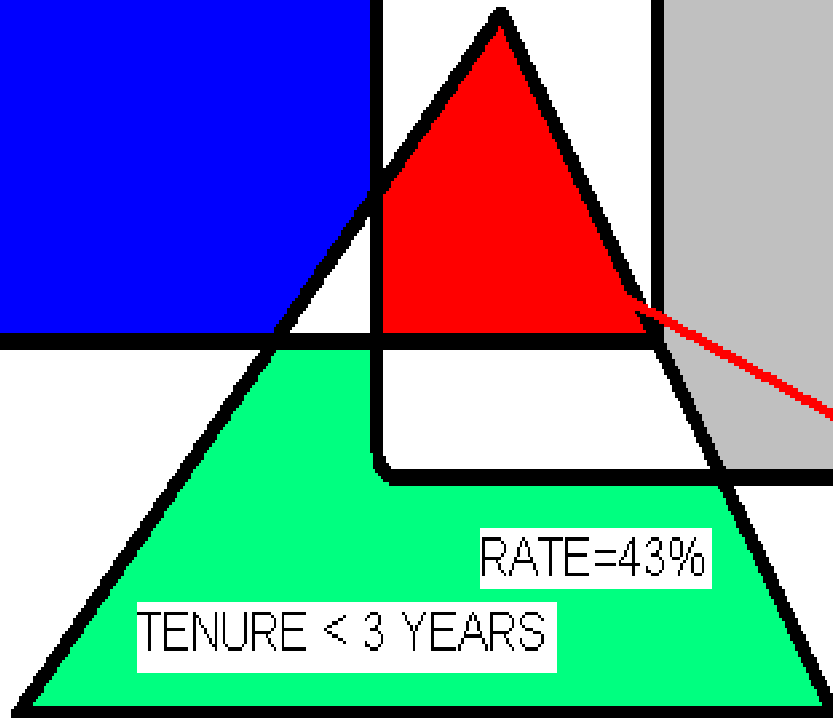
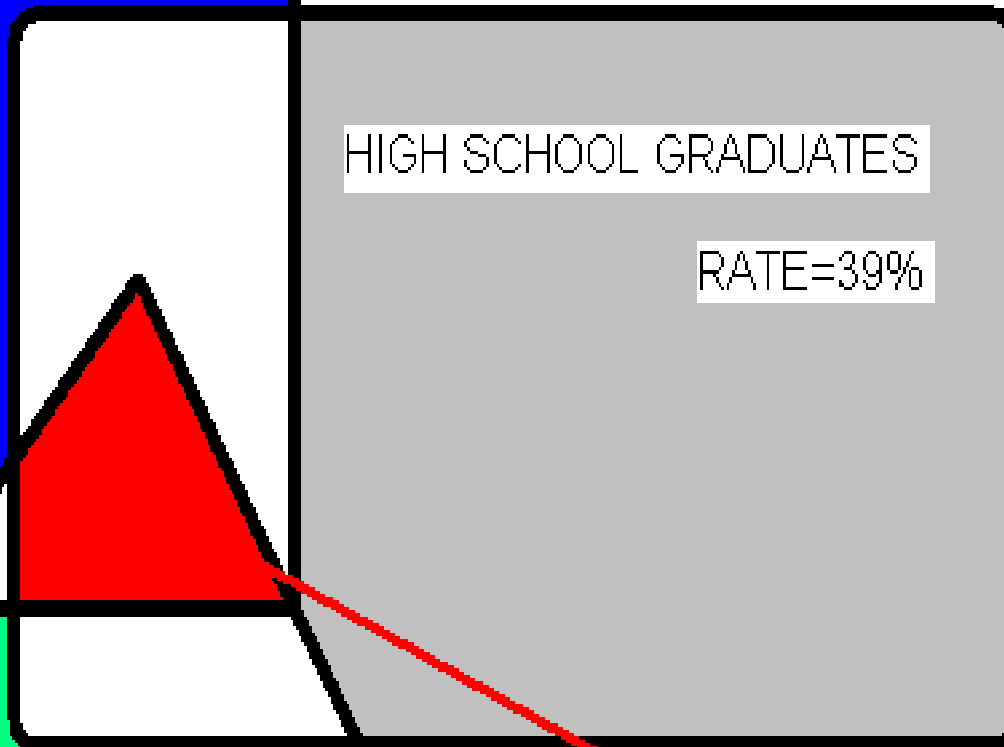
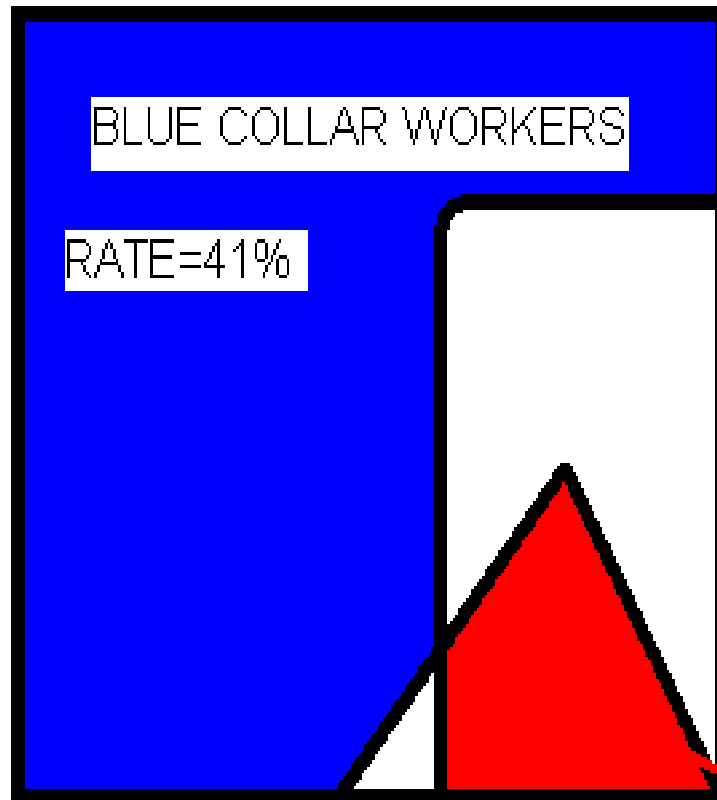
History of Profiling

- 1993 Unemployment Compensation Amendments
- Implement WPRS – Worker Profiling and Reemployment Services
- Construct profiling method to identify claimants likely to exhaust benefits
- Exhaust = receive maximum amount of benefits (26 weeks=104 days)

Current Profiling Method

- Mass Layoff Status (MLO) = 0,1
- Standard Industrial Classification (SIC) = description of industry, 83 classes
- Occupation (DOT) = professional, technical, managerial, blue-collar, etc.
- ED = <12 years, 12 years, 13-15 years, 16 years, >16 years
- TEN = time at present job (0-3, 3-5,6-9, 10+years)
- Profile=MLO||SIC2||DOT||ED||TEN
- Find exhaustion rate per profile

Defining a “profile” :



Exhaustion Rate of 61% for blue-collar high school graduates who work at the same place < 3 years.

Contingency Table used to find claimants score:

MLO	SIC	Occupation	Tenure	Education	Score
...
0	23	2	4	2	55
0	23	3	1	2	67
0	23	3	2	2	69
0	23	3	3	2	77
0	23	3	4	2	78
0	23	4	1	2	46
...

(Contains all possible combinations of variables and corresponding exhaustion rate.)

Modifications to the method

- Federal Significant Improvement Grant
- Investigation of new variables
- Updating scores to adjust for changes in economy
- Evaluation of prediction
- Score vs. average days

Areas of Investigation

- Stability over time
- Grouping variables
- Selecting variables (Restricted to administrative data)
- Model performance

Correlations Table 1.

Variable	definition	Score/days
Educ	Education level	0.020
Month	Month of claim	0.029
Qtr	Season of claim	0.039
Dot	occupation	0.064
SIC2	2 digit industry code	0.074
Tenure	Years at recent job	0.076
Cotype	6 groups based on duration of county	0.108

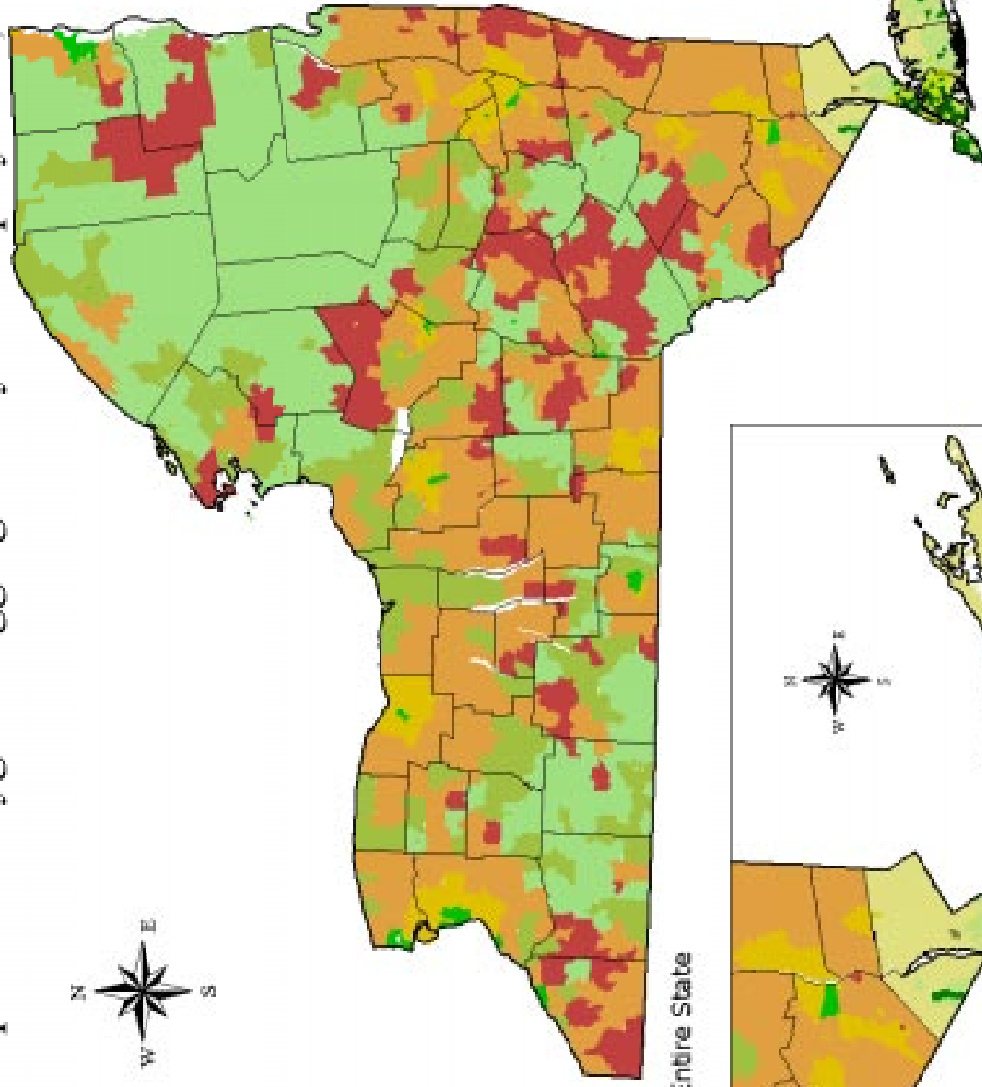
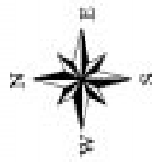
Sample data set: selected UI Claimants (96-98) n= ~ 1,200,000

Correlations Table 2.

Variables	Score(98) / Score(9697)
DOT – SIC2 – QTR	0.793
DOT – SIC2 – QTR – TENURE	0.637
DOT – SIC2 – QTR – EDUC	0.593
DOT – SIC2 – QTR - COTYPE	0.662
DOT – COTYPE - TENURE	0.971

UNEMPLOYMENT INSURANCE CLASSIFICATION GEOGRAPHY

Zip Code Polygons Aggregated by Unemployment, Region, and Population Density



12 New York State Zip code polygon aggregations based on 3 variables

Class Unemp Region Popdens

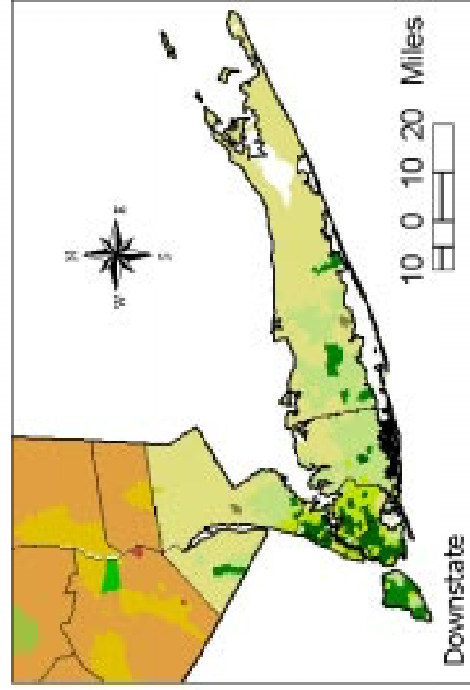
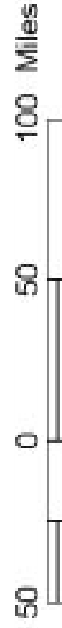
Class	Unemp	Region	Popdens
1	Low	Upstate	Low
2	Low	Upstate	Medium
3	Low	Upstate	High
4	Low	Downstate	Low
5	Low	Downstate	Medium
6	Low	Downstate	High
7	High	Upstate	Low
8	High	Upstate	Medium
9	High	Upstate	High
10	High	Downstate	Low
11	High	Downstate	Medium
12	High	Downstate	High



State outline

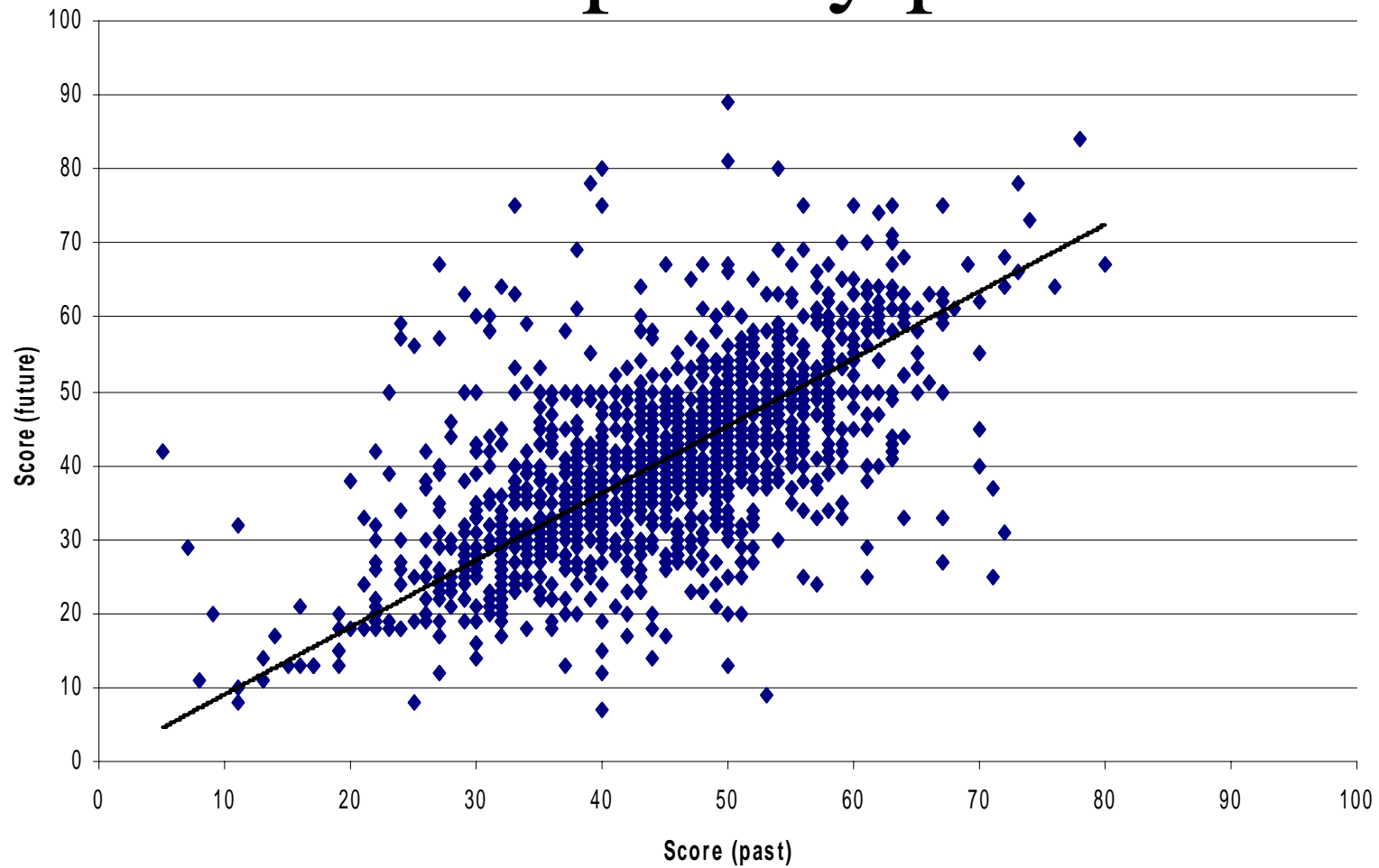


County outlines

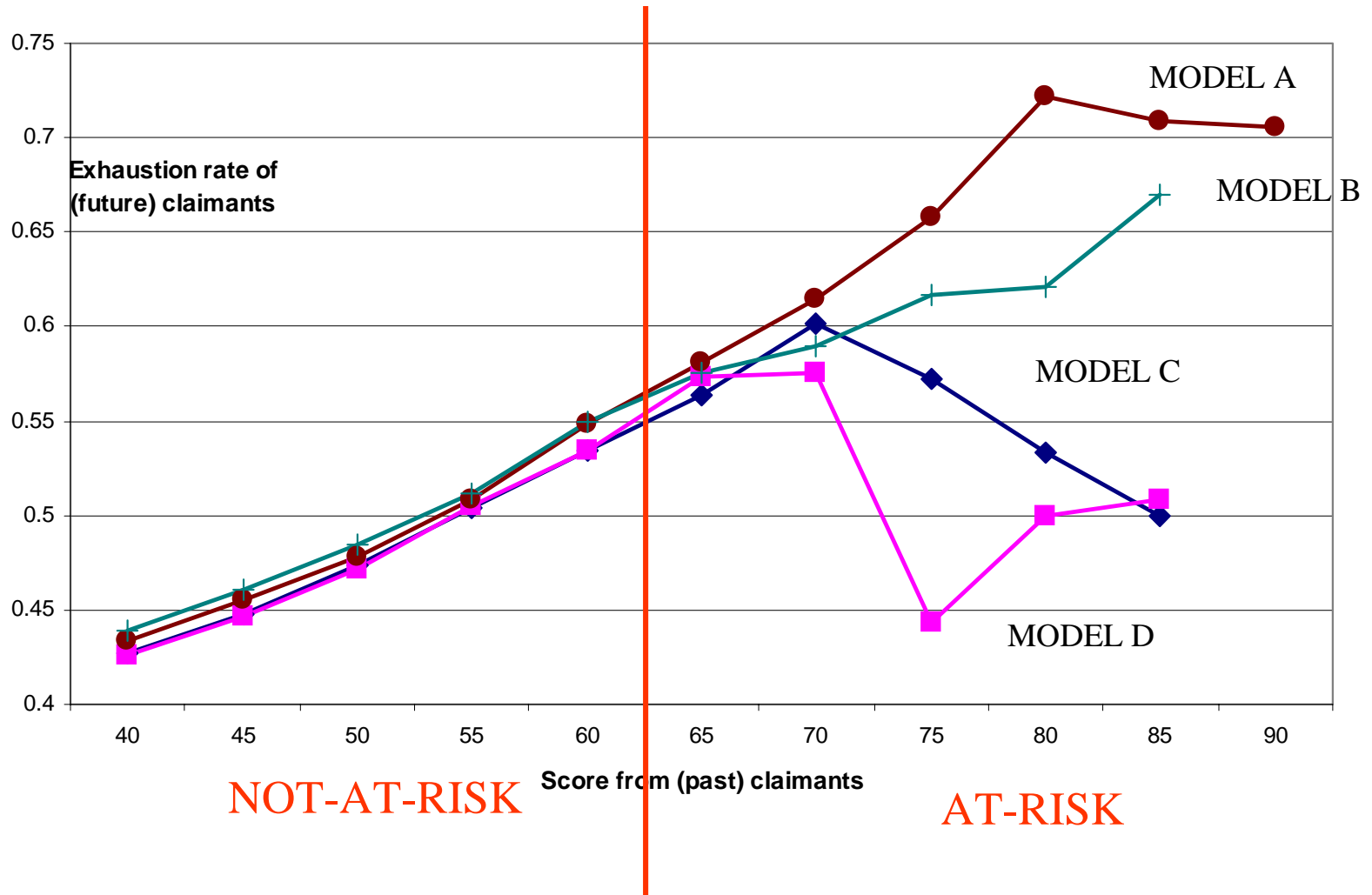


Downstate

Scatterplot by profile



Evaluation of Prediction



Modification to Investigation

- Exhaustion rate \rightarrow average days
- Average days = continuous variable
- Provides more information
- Can be directly related to monetary expenditures
- No change in data analysis

Work in Progress

- Investigation of additional variables
- Evaluation of these variables when combined with others
- Variable selection for new model
- Creation of new “scoring” table