- **Problem:**
  - Bank Examiners must rely on off-site risk-modeling tools to monitor banks, particularly smaller institutions that do not have as frequent on-site examinations.

- **Goal:**
  - Create a model that helps with early detection of financial distress and/or failure of a bank. The early detection system can help stem losses and save taxpayers from potentially costly government bailouts.
  - Utilize predictive analytics and further data analysis to detect individual bank weakness and vulnerability to failure.
Brief Summary of Data Cleaning and Analysis

1. Split the dataset into training and testing.
2. Built a logistic regression model
3. Narrowed down number of variables to 15 from 33
   a. Chosen by taking 3 training and testing sets on 1500 points
4. Utilized area under the curve to confirm accuracy

Results:

1,500:
Average accuracy on training 86.79%
Average accuracy on testing 86.59%
Average false negative on training 14.67%
Average false negative on testing 15.56%
Average false positive on training 12.48%
Average false positive on testing 12.33%

15,000:
Average accuracy on training 86.47%
Average accuracy on testing 86.43%
Average false negative on training 23.35%
Average false negative on testing 22.51%
Average false positive on training 8.62%
Average false positive on testing 9.10%
Market Adaptability and Insight

- Scalability of model for updates and iterative revisions
- Ease of model adoption for large array of regulatory bodies (FDIC, FRS, CSBS)
- Robust design for ease of manipulating variable importance for improved identification
- Simplicity focused with binary output for flagging forecasted failure