



**POWERLYTICS**

POWERFUL DATA, SMARTER DECISIONS

## ***Powerlytics Business Probability of Default Score***

### **Challenge**

Improve the effectiveness of small business loan underwriting by more successfully identifying the potential default of a borrower and provide a better understanding of overall loan portfolio risk.

### **Solution**

Powerlytics leveraged our Business Tax data and our Business Entry and Exit Scores for all 30 million for profit businesses in the U.S. to conduct a detailed analysis of the factors that accurately predict credit risk of a sample of loans provided by a customer. The Powerlytics Business Entry and Exit Scores are annual data on business entries and exits for firms by legal form of organization (sole proprietorships, partnerships, LLC's and corporations), by industry (naics3, naics4), by geography (U.S., state, MSA) and by size class (sales and employment class) for 100% of the businesses in the U.S. In order to conduct the default analysis, a customer's loan level data sample (to include default indicator) was merged with the Powerlytics data on a variety of dimensions including loan year, industry, zip code and revenue class. Default rates were then calculated by these dimensions and compared with the exit rates.

### **Results**

There is a 98% correlation between default rates in the customer sample and Powerlytics Business Exit Rates based on sales class.

- Results showed a very strong correlation between Powerlytics Exit rates and Customer Default rates especially for categorization by sales class. The correlation was 98% for businesses with annual sales in the range of \$500K-\$500M (sales classes 3-10 in the data).
- For businesses with annual sales in the range of \$500K-\$500M, average default rate in the customer sample was 5.18 times larger than matched exit rate from Powerlytics data, which highlights that the customer portfolio carries higher than average risk levels.

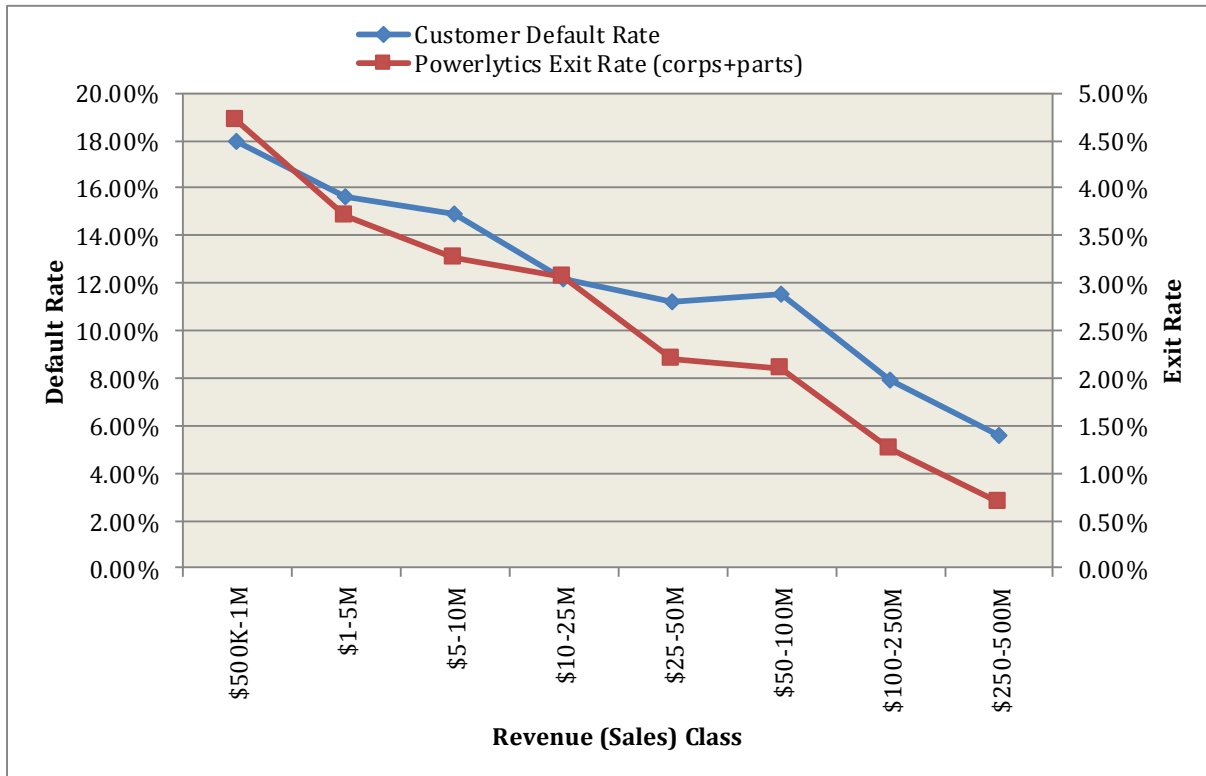
The following figure plots the default and exit rates:

Figure 1: Line Plot of Customer Default Rates and Powerlytics Exit Rates by Sales Class 3-10



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As can be seen from the line plot, there is a strong correlation between the Customer Default Rate and Powerlytics Exit rate series.

These findings highlight that exit rates for businesses in Powerlytics Business Entry and Exit data are very strong predictors of default rates in the customer sample and can provide accurate decision-making information for evaluating underwriting credit risk and assessing loan portfolio risk.