**Scotiabank**

**The problem: How to combine two relative rankings of credit risk into one ranking?**

In the wholesale space, Banks rates each individual borrower and gives a credit rating in a way similar to rating agencies. The internal credit rating plays an important role in the credit risk management framework.

Credit rating is defined as the relative ranking of default risk for a borrower of the Bank. The assignment of a relative ranking is industry-specific.

Each industry uses a rating model internally built by the Bank. A rating from the model is the starting point of rating assessment. The model rating usually will be further adjusted based on experienced credit judgement after considering borrower’s past performance and forecast of the future performance. When assigning the rating both borrower specific factors (e.g. level of debt, profitability etc.) and macro factors (e.g. Industry, geography etc.) are considered.

For an example, we rank borrowers in the Oil & Gas industry into 16 buckets and also rank borrowers in the Financial Services industry into 16 buckets. How can we combine these two relative rankings into one relative ranking scale so that the relative ranking is now considering borrowers in both industries?