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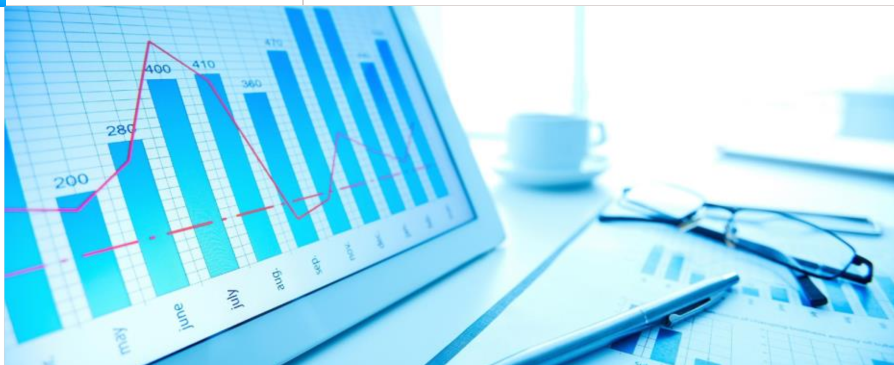
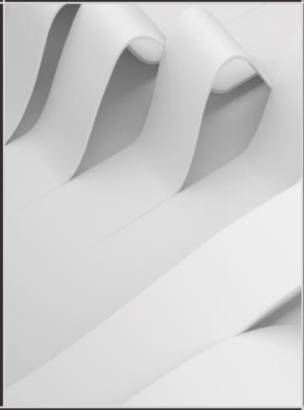
Tiger Analytics equipped the client with the power to estimate losses effectively. The solution replaced the existing loss forecasting models and stress testing that faced high regulatory scrutiny. The solution came with a robust Credit Loss Framework supplemented by detailed model documentation, adhering to relevant regulatory standards.




# The Background

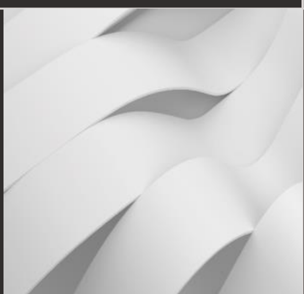
Our client is a large multinational Consumer Credit Reporting Bureau, helping organizations manage credit risk, prevent fraud, target marketing offers, etc. They faced regulatory scrutiny on existing loss forecasting models and stress testing for one of their customers, as their existing solution is supported by limited documentation. Hence, they recognized the need for a more effective forecasting solution based on a Credit Loss framework that aligns with the regulatory requirements from FRB, OCC, and FDIC and upcoming CECL changes.

# Key Challenges



**Regulatory compliance gaps:**
The expected credit loss models needed to be validated due to regulatory scrutiny on existing loss forecasting models.

**Lack of stress testing:**
There was no stress testing due to the lack of proof of adherence to modeling and validation guidelines (as per SR 11/7 and BASEL norms).



**Opaque vendor model:**
The current solution, a black box vendor model, came with restructured documentation, causing low visibility that went against audit regulations.

# Our Solution

Tiger Analytics built a robust Expected Loss Framework to capture credit losses and detailed process documentation. It ensured the client could meet the guidance and expectations on Current Expected Credit Loss (CECL).

The team developed this hierarchical solution at the most granular level to improve accuracy, supporting the forecasting process with the right analytical capabilities. The input data was leveraged from various resources- credit card payment patterns, default payment profiles, macroeconomic attributes, etc.

The team also improved data quality and cleaning with feature extraction that adhered to CCAR/DFAST frameworks.
Other solution highlights were:

- Effective credit behavior segmentation
- Potential Default (PD) Probability Model for credit card line of business
- Comprehensive model documentation to facilitate compliance with OCC supervisory expectations

## Tech Stack

python sas hadoop

# Solution Architecture

### Input Data

- Credit card payment pattern
- Account Balance profile
- Default payment profile
- FICO credit rating
- Macro economic data

### Variable Transformation

Variable data sanity & Cleaning

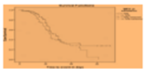
Feature extraction in line with CCAR / DFAST frameworks

Feature extraction Missing value imputation & Weight of Evidence / DFAST framework

WoE transformed dataset

### Credit behaviour Segmentation

Split by SB / consumer & then by defaulter / bankrupt / close



Defaulters – build survival curves & split

### Modelling

**Logistic Classifier**

Probability that the credit card will default in the next 30 days

Probability that the credit card will default in the next 30 days

Low

Very High

### Output

**Estimated Loss (EL) framework**

EAD

PD

LGD

Combine PD with EAD & LGD to obtain Total Estimated Loss

**Model Documentation in line with guidelines**

Robust model documentation in line with audit regulations

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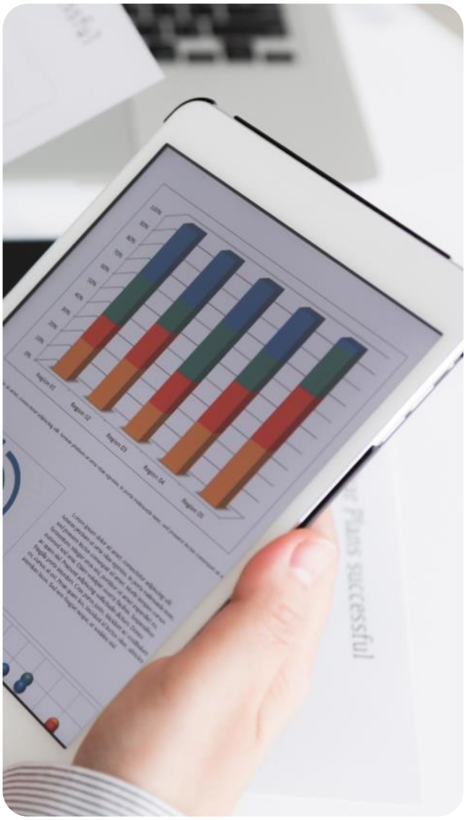

# Value Delivered

A robust Expected Loss Framework was deployed with proper back-testing and testing for different stress scenarios to **pass regulatory benchmarks.**

**Model fulfillment was achieved** with conceptually sound independent variables, strong risk capture, and reasonable scenario forecasts.

**Detailed documentation was established** with high transparency, describing end-to-end processes with quantified justifications for decisions and assumptions.

**Valuable insights** were delivered by visualizing the key regulatory indicators highlighted by FRB, OCC, FDIC, and updated CECL.

# About Us

Tiger Analytics is a global leader in AI and Analytics, helping Fortune 500 companies solve their toughest challenges. With over 4000 data technologists and consultants spread across offices in the US, Canada, UK, India, Singapore, and Australia, we help our customers accelerate their AI and Analytics journey in sectors like CPG, Retail, Insurance, BFS, Manufacturing, Life Sciences, and Healthcare. Tiger Analytics is a Great Place to Work Certified and a 'Leader' in the Forrester Wave: Customer Analytics Services Report 2023.

Visit https://tigeranalytics.com to see how Tiger Analytics provides certainty for a better tomorrow.