Financial Insights Dashboard Report

1. Introduction:

Objective: The primary objective of this project is to design and develop a comprehensive financial dashboard utilizing Tableau. The focus is on showcasing key performance indicators (KPIs) that specifically address risk-weighted assets (RWA), credit risk, and market risk.

Importance

Strategic Decision-Making: The financial dashboard is crucial for supporting strategic decision-making within the organization. It enables decision-makers, from executives to financial analysts, to grasp critical financial information efficiently.

Regulatory Compliance: Given the significance of risk-weighted assets, credit risk, and market risk, the dashboard is essential for monitoring and addressing regulatory requirements. It ensures compliance by presenting key financial data in a straightforward manner.

2. Summary

The "Financial Insights Dashboard Report" details the creation of a dynamic Tableau dashboard aimed at providing decision-makers with a clear overview of key financial metrics. The report outlines the comprehensive scope of the project, focusing on risk-weighted assets (RWA), credit risk, and market risk indicators. Utilizing Tableau's capabilities, the dashboard distills complex financial data into easily understandable insights, fostering a user-centric approach. The inclusion of tabs like RWA Overview, Credit Risk RWA, and Market Risk RWA facilitates seamless navigation. Additionally, specific KPIs such as Credit Risk Drivers and Market Risk Drivers offer detailed analyses of factors influencing risk variations. The dashboard, designed with simplicity and clarity in mind, enhances financial transparency and aids in strategic decision-making. The project's long-term impact lies in its adaptability to changing financial landscapes and regulatory dynamics, ensuring enduring value for the organization.

3. Data Preparation:

Data Collection: Initiated the project by creating mock data in Excel based on a detailed analysis of financial terms and structures observed in reference dashboards.

Data Exploration: Conducted an in-depth analysis of financial terms, including Risk-Weighted Assets (RWA), credit risk, market risk, cet and tier1 ratios. Explored various aspects such as potential correlations, and key indicators that would be vital for decision-makers. Leveraged Excel to organize and manipulate the mock data, ensuring that it accurately reflected the financial landscape of interest.

Python Code for Commentary Extraction:

Utilized Python code with regular expressions to perform a targeted extraction of numerical data from the commentary column of the mock data. The objective was to isolate specific information related to credit risk, RWA, and the difference between predicted and actual values. This process involved a careful consideration of patterns and structures within the commentary text, ensuring accurate extraction.

Code Explanation:

Regular Expression (re): The regular expression library was employed to define patterns for identifying relevant information within the commentary.

Extracting Predicted Credit Risk: The code targeted expressions indicating changes in credit risk, capturing both the amount and the direction of the change (increase, decrease).

Pattern for Commentary Analysis: A specific pattern was crafted to understand the driving factors mentioned in the commentary, providing additional context for decision-makers.

Data Transformation: The extracted information was then integrated into the dataset, preparing it for seamless integration into Tableau dashboards.

Python code-

```
import re

def extract_predicted_credit_risk(commentary):
    match = re.search(r'\$([0-9.]+) billion (increase|decrease)', commentary)
    if match:
        return float(match.group(1).replace(',', '')) if match.group(1) else float(match.group(3).replace(',', ''))
    else:
        return None
pattern = re.compile(r"because of (.*?)(?= as assessed by Analyst)")
df1["drivers"] = df1["RWA commentry "].apply(lambda x: re.search(pattern, str(x)).group(1).strip() if re.search(pattern, str(x)) else "")
```

KPIs:

1)Risk-Weighted Assets (RWA):

Risk-weighted assets (RWA) is a quantitative measure utilized to evaluate the total risk exposure associated with a bank's assets. It takes into account the diverse degrees of risk associated with different types of assets held by the bank.

Importance:

Understanding RWA holds paramount importance for financial institutions. It serves as a critical metric for regulatory compliance and plays a central role in assessing the capital adequacy of a bank. Regulators and supervisory authorities mandate the calculation and monitoring of RWA to ensure that financial institutions maintain an appropriate level of capital relative to their risk exposure.

2)Market Risk:

Market risk refers to the potential financial losses an organization may face due to changes in market conditions. It encompasses various types of risks associated with fluctuations in interest rates, currency exchange rates, commodity prices, and other market variables.

Actual Market Risk:
Actual market risk represents the realized or current exposure to financial losses due to market fluctuations. It provides a snapshot of the current impact of market conditions on the organization's financial position. Assessing actual market risk is essential for immediate risk management and understanding the real-time implications of market dynamics.

Predicted Market Risk:
Predicted market risk involves forecasting potential future financial losses resulting from market fluctuations. This forward-looking analysis allows for proactive risk management, enabling the organization to anticipate and mitigate potential market risks before they materialize. Accurate prediction of market risk is instrumental in strategic planning and maintaining financial resilience amid evolving market conditions.

3)Credit Risk:
Credit risk refers to the potential loss arising from a borrower's failure to repay a debt as per agreed terms.
Importance:
Essential for assessing the likelihood of default and maintaining a healthy loan portfolio.

Actual Credit Risk:

Actual credit risk represents the realized or current exposure to financial losses due to the default of a borrower. It involves assessing the current impact of borrowers failing to meet their repayment obligations, providing a real-time snapshot of risk.

Predicted Credit Risk:

Predicted credit risk is an analysis conducted by financial analysts to forecast potential future losses resulting from borrower defaults. This forward-looking assessment allows for proactive risk management, enabling the organization to anticipate and mitigate potential credit risks before they materialize. The predicted credit risk is instrumental in strategic planning and maintaining the overall health and stability of the loan portfolio.

4)Difference Between Actual and Predicted Credit Risk:

Definition:

Actual credit risk is associated with the realized financial loss due to a borrower's default, while predicted credit risk is linked to anticipated future losses based on analyst analysis.

Importance:

Distinguishing between actual and predicted credit risk is crucial for tailoring effective risk management strategies. While actual credit risk provides a real-time understanding of current exposures, predicted credit risk enables proactive measures to anticipate and mitigate potential future risks. This differentiation allows organizations to adopt a comprehensive and strategic approach to credit risk management.

5)Capital Metrics:

Tier 1 and Tier 2 Capital:

Definition: Regulatory capital categories; Tier 1 includes common equity, Tier 2 includes subordinated debt.

Importance: Regulators use these metrics to ensure banks maintain a sufficient capital buffer.

CAR Ratio (Capital Adequacy Ratio):

Definition: Proportion of a bank's capital to its risk-weighted assets.

Importance: Essential for financial stability and regulatory compliance.

CAR= (Tier 1 Capital+Tier 2 Capital×100)/ Risk-Weighted Assets

CET1 Ratio (Common Equity Tier 1 Ratio):

Definition: Measures the core equity capital of a bank as a percentage of its risk-weighted assets.

Importance: Key indicator of a bank's financial strength and ability to absorb losses.

$CET1Ratio$=(Common Equity Tier 1 Capital×100)/ Risk-Weighted Assets

Tier 1 Ratio:

Definition: Assess the financial institution's core capital relative to its risk-weighted assets.

Importance: Provides insights into the bank's resilience to financial stress.

Tier 1 Ratio= (Tier 1 Capital×100)/ Risk-Weighted Assets

6)Credit Risk Detection:

Formula Used: IF [Difference] > 0 THEN 'increase'

ELSEIF [Difference] < 0 THEN 'decrease'

ELSE 'flat'

END

Explanation:

Increase: Indicates a positive difference, suggesting an increase in credit risk.

Decrease: Indicates a negative difference, suggesting a decrease in credit risk.

Flat: Indicates no significant change in credit risk when the difference is zero.

7)Market Risk Detection:

Formula Used:

IF [Difference] > 0 THEN 'increase'

ELSEIF [Difference] < 0 THEN 'decrease'

ELSE 'flat'

END

Explanation:

Increase: Indicates a positive difference, suggesting an increase in market risk.

Decrease: Indicates a negative difference, suggesting a decrease in market risk.

Flat: Indicates no significant change in market risk when the difference is zero.

8)Credit Risk Drivers:

Definition: Credit risk drivers represent the underlying factors and reasons contributing to changes in credit risk. These may include shifts in economic conditions, changes in borrower behavior, or alterations in the overall credit environment.

Importance: Identifying credit risk drivers is essential for a granular understanding of the factors influencing credit risk, enabling proactive risk management and strategic decision-making.

9)Market Risk Drivers:

Definition: Market risk drivers encompass the key factors responsible for variations in market risk. These factors could involve changes in interest rates, market volatility, geopolitical events, or other external influences affecting financial instruments.

Importance: Understanding market risk drivers provides insights into the dynamics of the financial markets, helping organizations adapt to changing conditions and optimize investment strategies.

4. Tableau Dashboards:

Dashboard Structure: Developed a comprehensive dashboard structure within Tableau, consisting of a single dashboard with five distinct tabs.

Tab Descriptions:

RWA Overview: This tab provides an overall view of Risk-Weighted Assets (RWA), including key metrics such as RWA, Tier 1 and Tier 2 capital, and various capital adequacy ratios.

Credit Risk RWA: Focuses specifically on credit risk-related metrics within the RWA framework, offering insights into credit risk exposure, predicted vs. actual risk, and associated drivers.

Market Risk RWA: Concentrates on market risk-related metrics, highlighting actual market risk, predicted market risk, and their implications on the organization's financial position.

Credit Risk Drivers: Explores the driving factors behind credit risk changes, providing detailed information on what contributes to fluctuations in credit risk.

Market Risk Drivers: Similar to the Credit Risk Drivers tab, this tab delves into the specific factors influencing market risk, offering a nuanced understanding of market risk dynamics.

Navigation Implementation:

Utilized Tableau's feature to create a single dashboard with multiple tabs, enhancing organization and accessibility.

Implemented navigation buttons within the dashboard to facilitate seamless transitions between the five tabs. This ensures that users can easily navigate to the specific information they need without unnecessary complexity.

Year-wise Filters: Integrated filters, including year-wise filters, to allow users to customize the data displayed based on their selected time frames. This enhances the dashboard's flexibility and relevance for various reporting periods.

User-Friendly Design:

Ensured a user-friendly design, focusing on clarity and intuitive navigation.

Leveraged interactive elements, such as buttons and filters, to empower users in exploring the dashboard and extracting valuable insights.

Dashboard Visualization Techniques:

In the creation of the financial dashboard, a diverse set of visualization techniques has been employed to enhance clarity, interpretability, and engagement for decision-makers.

Line Charts:

the integration of line charts proves to be a powerful and effective strategy for visually representing the trends associated with both credit risk and market risk over different dates. This visualization technique enhances the dashboard's capacity to convey complex information in a comprehensible and insightful manner.

Bar Graphs:

Purpose: Bar graphs are employed to compare values across different categories or time periods. In the context of the financial dashboard, bar graphs may be used to visually compare the actual and predicted market risks, credit risks, or other relevant KPIs.

Treemaps:

Purpose: In the financial dashboard, treemaps have been strategically employed to provide a detailed breakdown of key drivers influencing Risk-Weighted Assets (RWA). Treemaps are powerful visualizations that present hierarchical data structures in a space-efficient manner, making them ideal for illustrating the composition of RWA drivers

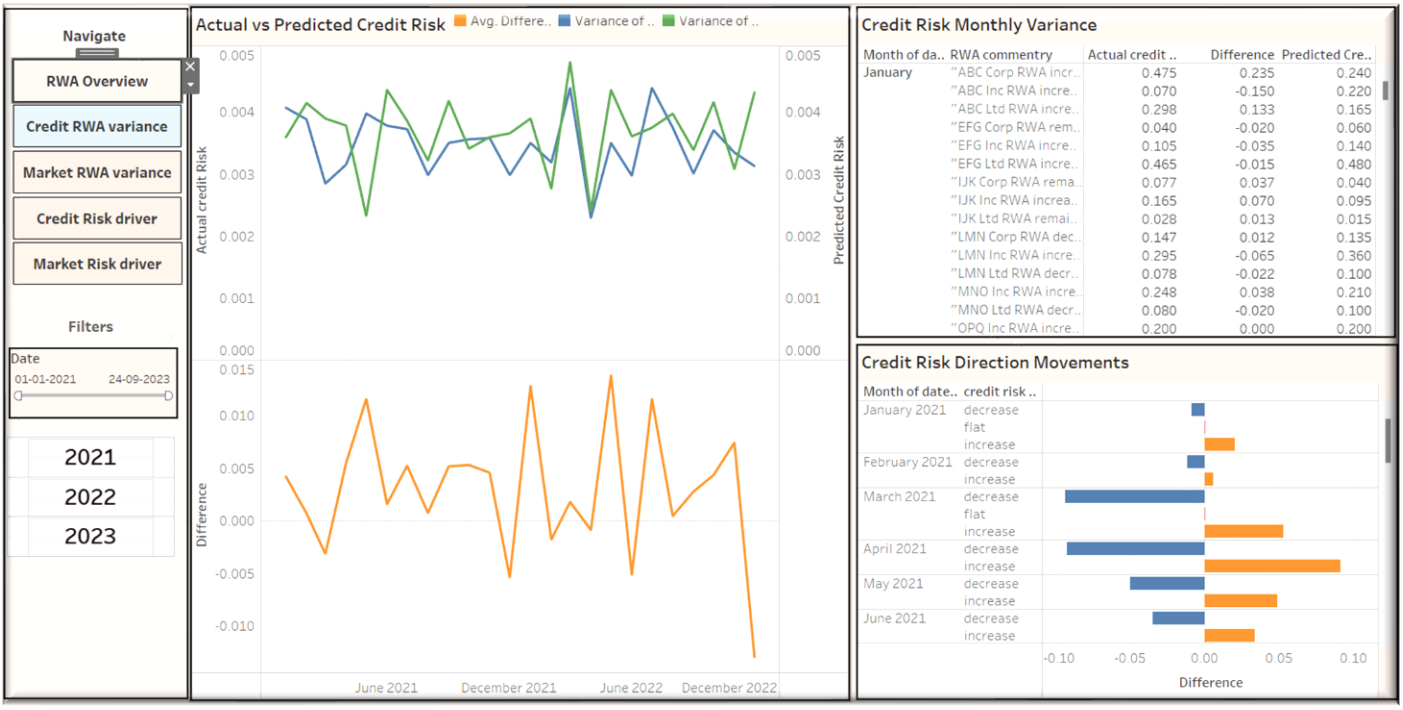
Highlights Tables:

Purpose: Highlights tables offer a concise and summarized presentation of key metrics. They are particularly useful for spotlighting critical figures, such as capital adequacy ratios, in a way that quickly captures attention and aids decision-making.

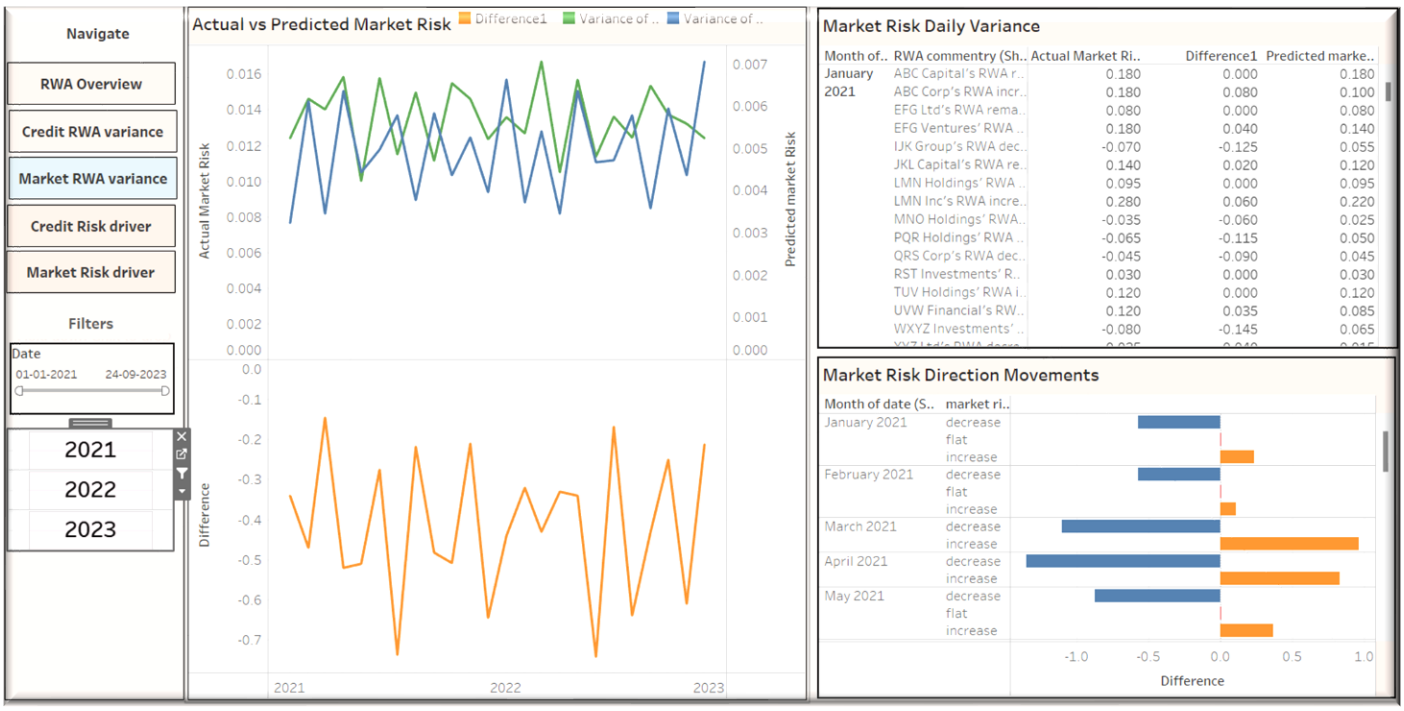
Screenshots of dashboard-

1) RWA Overview

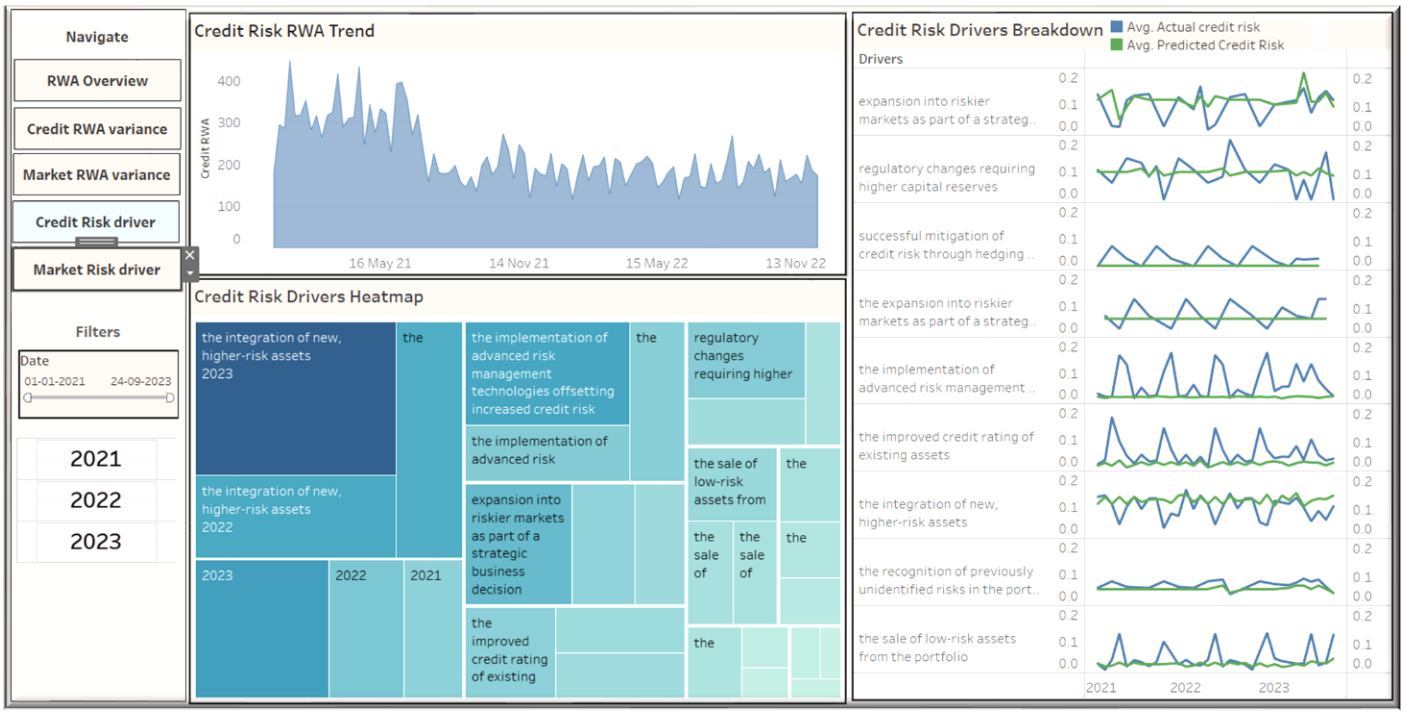
2) Credit RWA Variance-



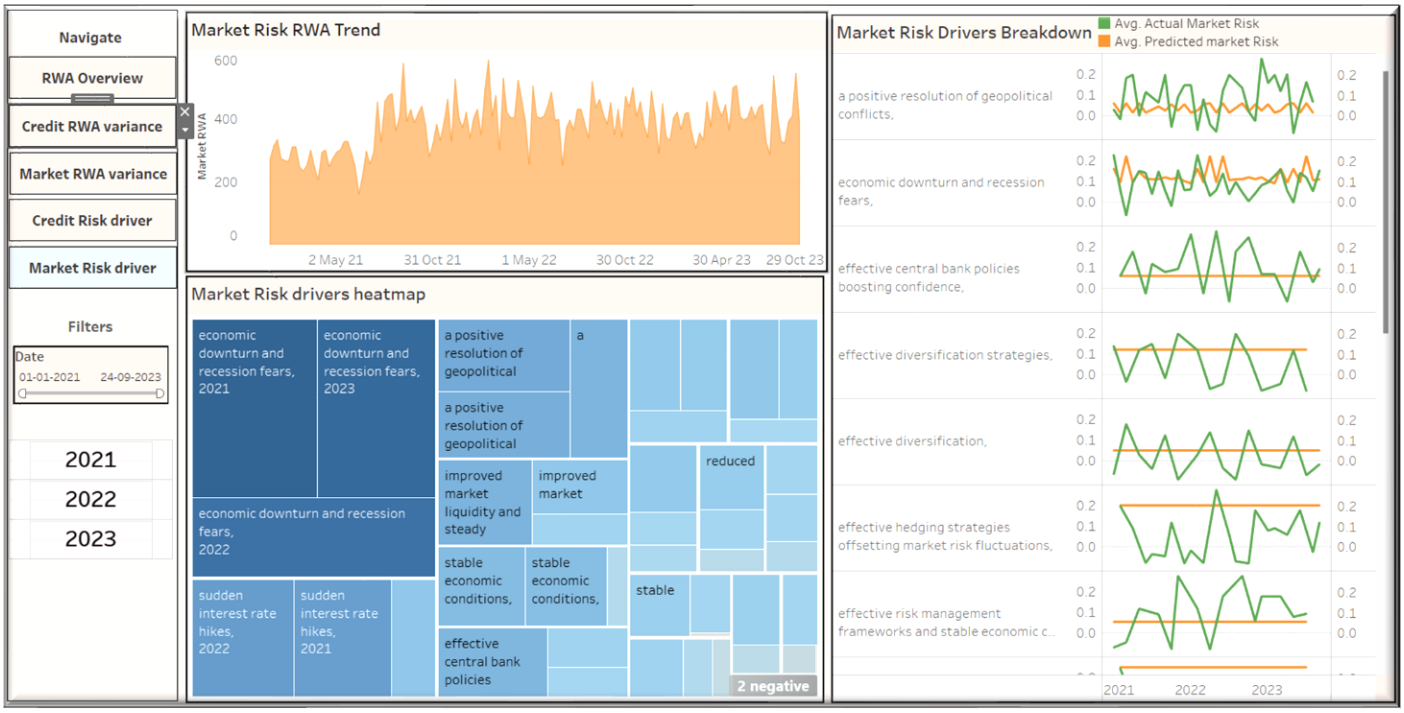
3) Market Risk Variance-



4) Credit Risk Driver-



5) Market Risk Driver-



5. Conclusion

Outcome: The resulting Tableau dashboard provides decision-makers with a visually appealing and insightful representation of key financial metrics, facilitating informed decision-making.

Future Steps: Continuous Improvement for Real-Time Insights

To ensure ongoing relevance, the next phase involves transforming the dashboard into a live, dynamic tool by incorporating real-time data. This evolution enables continuous monitoring and immediate responsiveness to changing financial landscapes. By integrating live data feeds, the dashboard becomes a proactive resource, empowering decision-makers with up-to-the-minute insights. This strategic enhancement aligns the dashboard with the organization's financial goals, providing a responsive platform for agile decision-making in a rapidly evolving financial environment. Regular updates and refinement will sustain its effectiveness as a dynamic and indispensable tool for financial analysis and risk management.