

A Financial Analysis of Banks

Introduction

An Overview

Banks, as integral players in the economy, serve as the engine that drives financial transactions and enables economic progress. It is essential to delve into the intricacies of their financial health, comprehensively assessing various factors that contribute to their performance. By analyzing key metrics such as profitability, liquidity, and asset quality, we can gain a deeper understanding of how banks operate and make informed judgments regarding their stability and growth potential. Additionally, exploring the regulatory frameworks that govern the banking industry allows us to assess the compliance measures and risk management practices in place, ensuring the safety and reliability of financial institutions. Through this report, we aim to unravel the complexities of bank financial analysis, providing valuable insights to stakeholders seeking to navigate the ever-evolving landscape of banking with confidence.

The Purpose

The purpose of this project is to utilize the power of Tableau to conduct a comprehensive financial analysis of the top 100 banks worldwide. By leveraging the data visualization capabilities of Tableau, this project aims to provide a visually engaging and intuitive platform for stakeholders to explore and understand the financial performance and trends exhibited by these banks.

The project report will serve as a valuable resource for investors, financial analysts, and decision-makers, offering deep insights into key financial indicators, risk profiles, and comparative analysis across the banking industry.

Ultimately, this project seeks to empower stakeholders with actionable information, facilitating informed decision-making and fostering a deeper understanding of the global banking sector.

Literature Survey

1. Title: Analysis of Financial Performance of Selected Commercial Banks in India

Authors: Srinivasan Palamalai and Britto John

This study evaluates the financial performance of selected Indian commercial banks from 2012/13 to 2016/17. The sample consists of 16 banks, 11 from the public sector and 5 from the private sector. Using financial ratios, the study finds that private sector banks consistently outperformed their public sector counterparts throughout the study period. The impact of liquidity, solvency, and efficiency on profitability is examined using panel data estimations. The results indicate that liquidity and solvency ratios positively and significantly affect the profitability of public sector banks, while turnover and solvency ratios have a similar impact on private sector banks. These findings emphasize the importance of these ratios in assessing bank profitability.

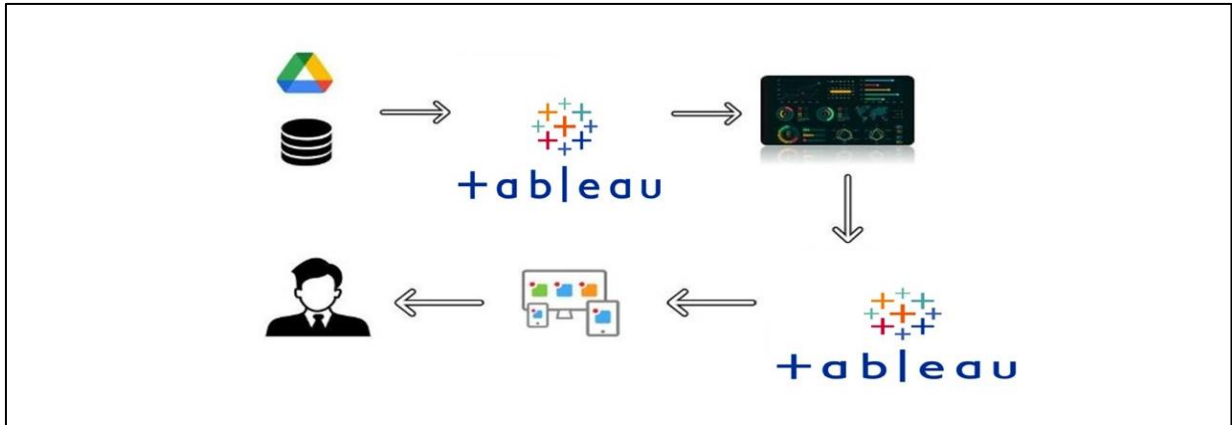
2. Title: Analyzing Performance of Banks in India: A Robust Regression Analysis Approach

Authors: Mohammad Athar Ali, Asif Pervez, Rohit Bansal

This research aims to analyze the impact of bank performance determinants on bank performance by applying robust regression analysis. For this, the relationship between return on assets and net interest margin with bank performance determinants has been discussed using robust regression. Robust regression offers a better and more realistic analysis owing to reducing the impact of outliers and influential data, and it is recommended for more precise results.

Theoretical Analysis

Block Diagram



Hardware/Software Requirements

Hardware:

- WindowsOS:
 - Microsoft Windows 8/8.1, Windows 10 (x64)
 - 2GB memory
 - 1.5GB min. free disk space
- MacOS:
 - macOS Catalina 10.15, macOS Big Sur 11.4+, and macOS Monterey 12.6+ (for Tableau 2022.3+)
 - Intel or Apple Silicon Processors
 - 1.5GB min. free disk space

Software:

Tableau Desktop Application, Flask for developing the website, MySQL to connect to database, Chrome browser.

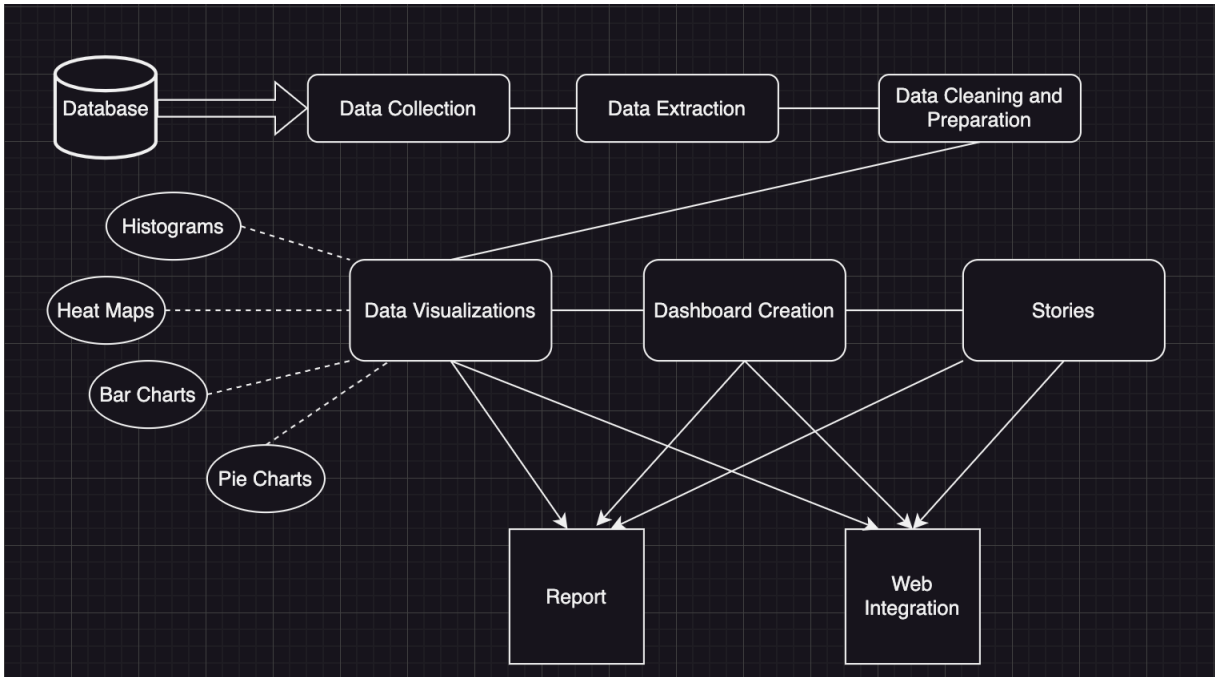
Experimental Investigations

Examining the top 100 banks worldwide provides valuable financial insights with significant implications for individuals, businesses, and economies. Firstly, these banks collectively manage trillions of dollars in assets, illustrating their immense size and impact. They serve a vital function by extending loans and financial support to both businesses and individuals, thereby fostering economic expansion. Moreover, profitability stands as a crucial measure, as the leading banks consistently generate substantial income through diverse operations like lending, investment banking, and asset management. This ability to generate profits is essential for maintaining operational stability, expanding service offerings, and delivering value to shareholders.

Through investigating the dataset and the given problem, we came to understand that out of the top 100 banks across the world, China and USA dominate the list with a total of 22 banks and 14 banks respectively. This cumulatively adds up to 34% of the total top 100 banks.

Though China leads the other countries in almost all categories, it still remains localized to the Chinese population. Whereas banks of other countries are more well known and more frequented by countries other than their own home.

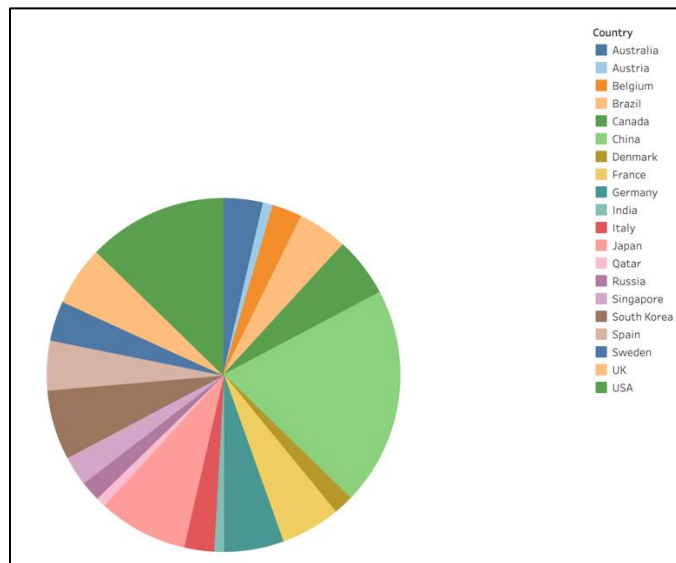
Flow Chart



Results

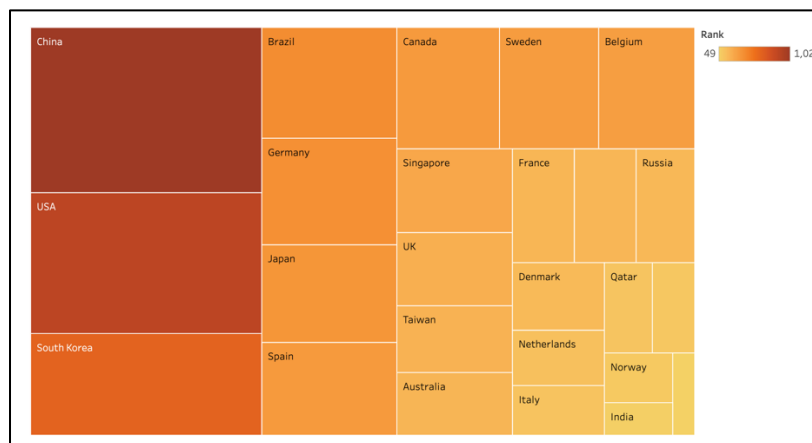
Given below are the findings and results we obtained from the project:

1. Country-wise count of banks in the top 100 list.



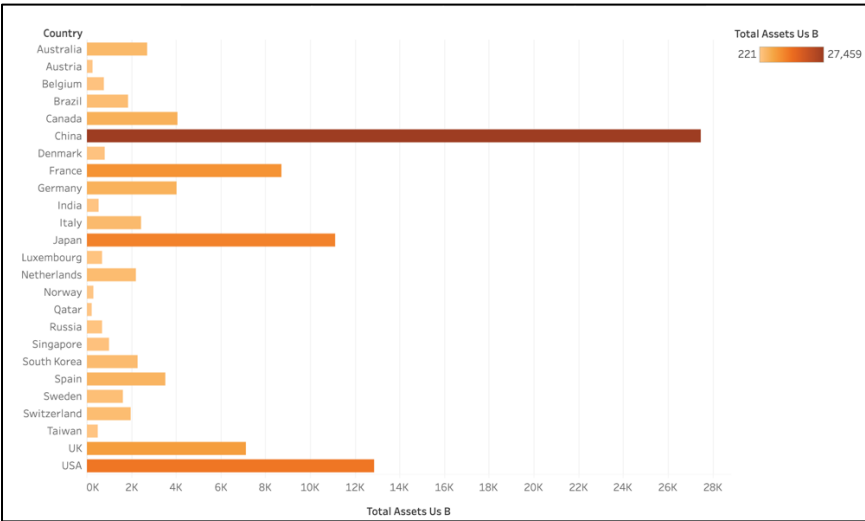
This visualization shows that China and USA lead the list and have a big chunk of the total top 100 banks. This is followed by Japan

2. Sum of ranks from the Top 100.



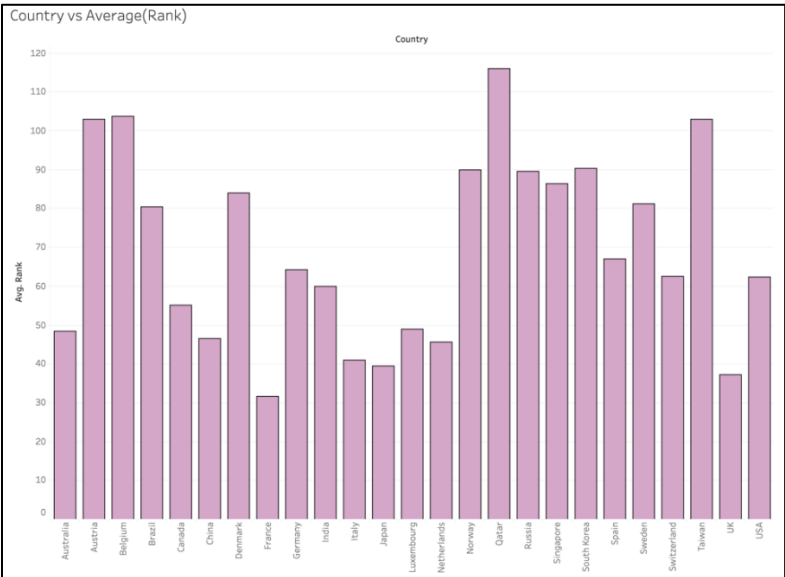
Though South Korea falls behind Japan in the number of banks it has on the top 100 list, its rankings as a total is higher than those of Japan.

3. Total Assets owned by banks of countries.



Assets of a bank include property, equipments, investment securities, loans, advances, cash, cash equivalents etc. China, USA, Japan, France and UK have the highest amount of such assets than the other nations in the list.

4. Average Ranking of countries wrt all banks under their banner.



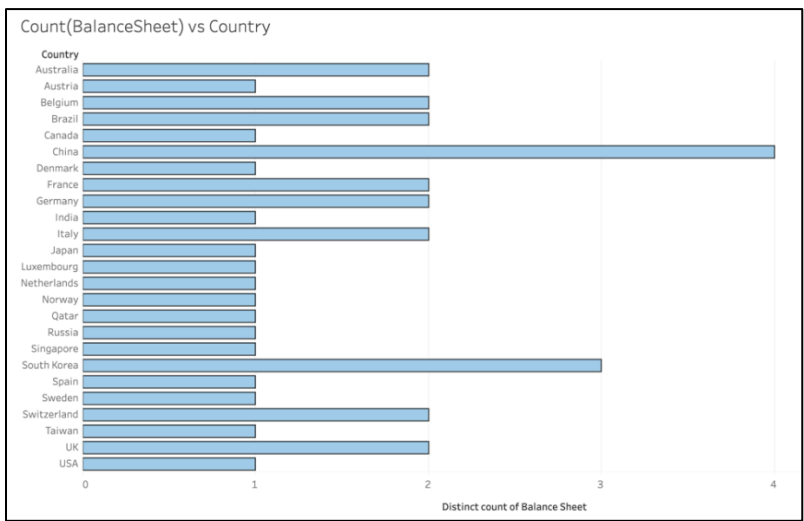
Banks of Qatar, Belgium, Austria and Taiwan have a higher average than the others. This is because they have lesser number of banks in the list but the ranks of those banks are higher than many other.

5. Distinct count of total assets wrt to the balance sheets onto a map.

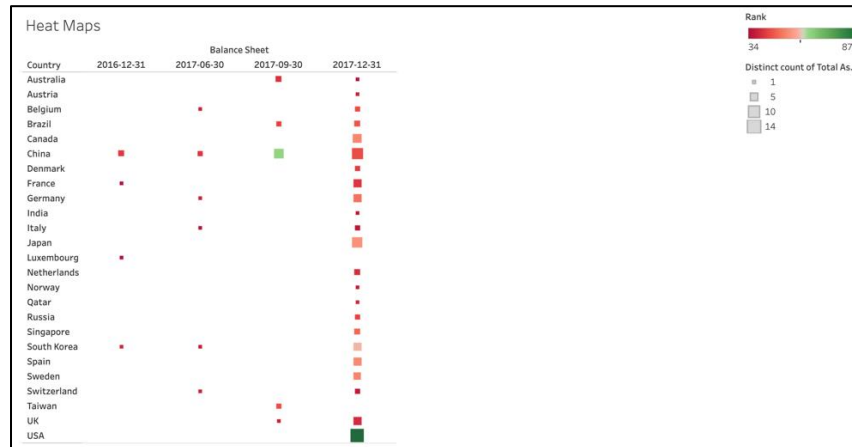


The pie chart above each country shows how much each time period's balance sheets account for the total year. We took the balance sheets data between the financial year 2016 and 2017.

6. Distinct count of balance sheets



7. Visualize relation between Balance Sheets and Assets.



The boxes show amount of assets and color indicates rank while the columns show the balance sheet dates.

Advantages of Proposed Solution

Our proposed solution to analyze financial performance of top 100 banks considers the major parameters needed to define its financial status. We use those parameters to analyze the how financially stable and active a bank is and how deeply they could impact the world's banking sector.

We used the bank's global ranking, balance sheets for a financial year and total assets to build an image or visualization to better understand the value of the bank. Hence this analysis can prove to be easily understandable for even a layman.

Disadvantages of Proposed Solution

Since we wanted the analysis to be understandable by a layman, we only scratched the surface of parameters than can be taken to analyze a bank's financial standing.

Delving deeper into complex and intricate parameters can give more sturdy and strong analysis of banks. This may lead to a change in perception of a bank or the country that the bank's based on. For example, we saw that Japan had more banks in the list than South Korea. But instead of leaving that as the conclusion we pressed forward and got to know that though South Korea has lesser banks, they have a higher total ranking than Japan. Just like this getting deeper into details may change in conclusion of banks financially.

Applications

Financial analysis of banks holds significant benefits for individuals and other companies. For individuals, it provides a comprehensive understanding of the financial health and stability of a bank where they may hold their savings or seek loans. individuals can make informed decisions about the safety of their deposits and the reliability of the bank in managing their finances.

Similarly, for companies, conducting a financial analysis of banks is crucial, especially when selecting a banking partner for various financial services. Companies need to assess a bank's financial strength and stability to ensure secure transactions, access to credit facilities, and effective cash management solutions. Furthermore, financial analysis assists companies in evaluating the bank's expertise and experience in serving businesses within their industry or sector.

Financial analysis of banks plays a crucial role in helping banks themselves. It enables banks to evaluate their own financial performance and identify areas of strength and weakness. By conducting a comprehensive analysis of key financial indicators such as profitability, liquidity, and asset quality, banks can gain insights into their operational efficiency and make informed decisions to enhance their overall performance.

Conclusion

In conclusion, analyzing a bank financially not only benefits itself but also helps individual customers and big companies make informed decisions to choose a bank that can provide them with personally tailored solutions and consultations. This Financial Analysis report take into account the most basic paramters of the top 100 banks and assesses the quality of those banks so that a layman could understand the working of such banks.

This lays ground work for more deeper insights on monetary institutions and their financial status. The same framework can also be implemented into gain insights on companies and institutions other than just banks.

Future Scope

The future scope of the financial analysis project utilizing Tableau for the top 100 banks is promising, offering opportunities for further advancements and enhancements. The project can explore incorporating advanced predictive modeling and machine learning techniques to forecast key performance metrics and identify potential risks, enabling proactive decision-making.

Additionally, expanding the analysis to include regional or sector-specific breakdowns would provide more tailored insights, while real-time data feeds and APIs can offer up-to-the-minute analysis for timely information. With these potential developments, the project has the potential to continue delivering valuable insights and supporting decision-making in the dynamic global banking landscape.

Bibliography

<https://www.tableau.com/learn/get-started/dashboards>

<https://help.tableau.com/current/pro/desktop/en-us/stories.htm>

<https://www.tutorialspoint.com/flask/index.htm>

Appendix

Link to Website:

<https://financialanalysisofbanks.netlify.app/>

Link to video on Dashboard and Story:

<https://drive.google.com/file/d/19QYc3bFQvGRTW6kBfhx1lZ9yBSfNazzS/view?usp=sharing>

Link to video on Website:

<https://drive.google.com/file/d/1eJFWrEXbtp1YTYDRrTFqO-Zs7DjTjNmS/view?usp=sharing>