Quantitative Analysis of Ghana’s Treasury Market Performance (2021 – 2025)

1. EXECUTIVE SUMMARY

This report examines the interest rate dynamics of the Government of Ghana’s Treasury securities from January 2021 to late 2025. Utilizing Python for data engineering and Power BI for advanced visualization, the study audits tender consistency and analyses yield trends. The results identify 2023 as a period of significant market stress, characterized by a peak yield spread of 4.5 between short and long-term bills. The report concludes that while the market experienced extreme volatility and high interest rates (peaking at 36.73%), 2025 data indicates a stabilizing trend with rates returning to the 16-18% range.

2. INTRODUCTION

The purpose of this report is to provide a data-driven overview of Ghana’s debt market behaviour over a five-year horizon. In recent years, the Ghanaian economy has faced unique challenges, including high inflation and debt restructuring, which are directly reflected in Treasury Bill (T-Bill) yields.

This report covers:

- Data integrity and compliance with Bank of Ghana (BOG) scheduling.
- The evolution of the yield curve across 91, 182, and 364-day instruments.
- The "Term Premium" the extra reward paid for long-term investment.
- Seasonal patterns that dictate the most lucrative times for market entry.

3. FINDINGS & ANALYSIS

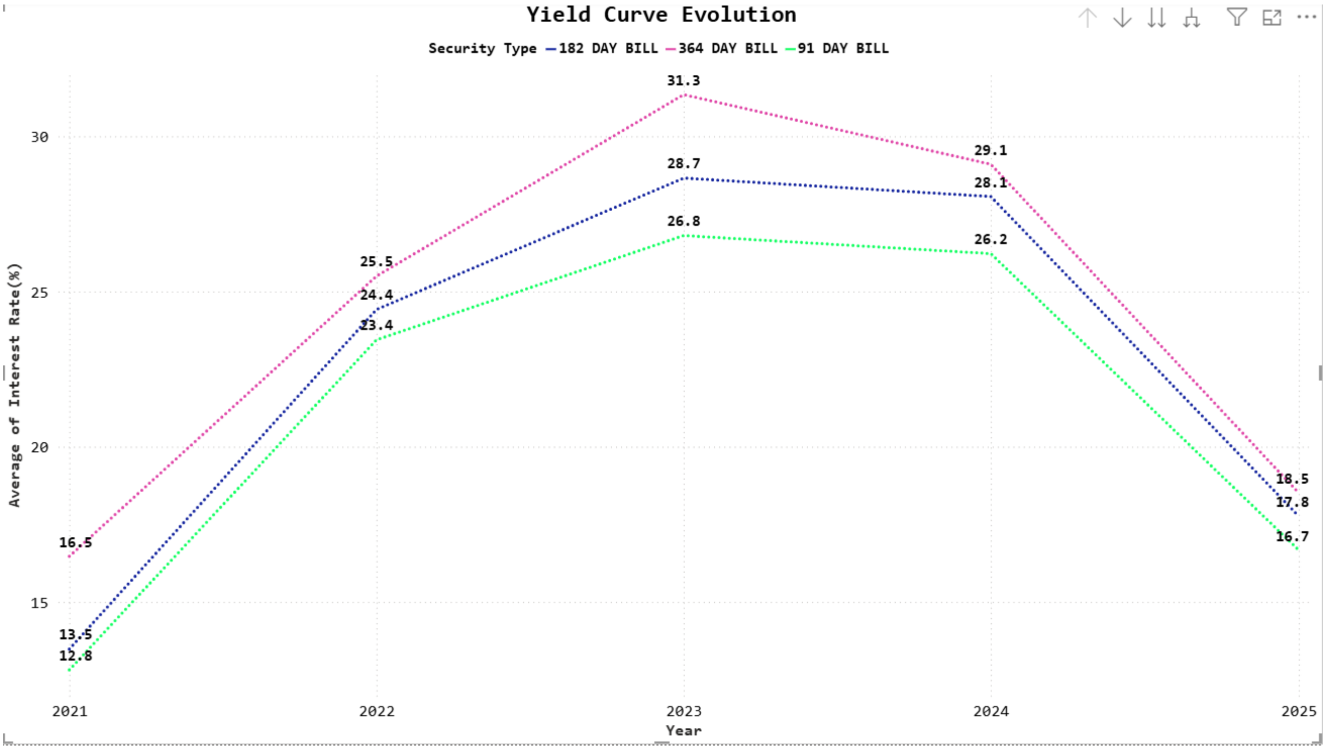
3.1 Data Integrity and Engineering

Before visualization, a data audit was conducted in Python to ensure compliance with the Bank of Ghana's regulatory schedule.

- **Audit Result:** 100% of the 248 analysed tenders were issued on Mondays, confirming high data reliability.

- **Feature Engineering:** Custom attributes were created, including "Asset Class" (categorizing Bills vs. Bonds) and chronological time-features to facilitate seasonal analysis.

3.2 Yield Evolution and Market Stress



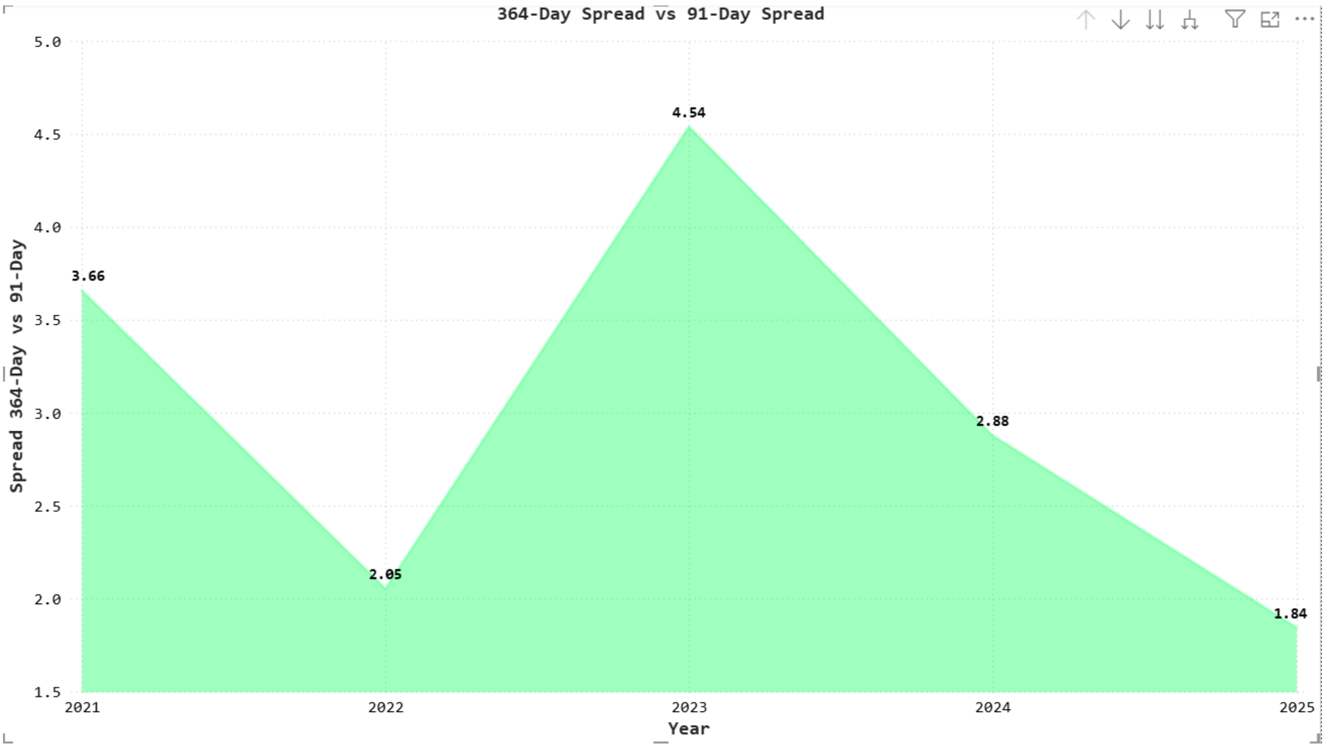
The **Yield Curve Evolution** analysis shows a dramatic climb in interest rates starting in 2022.

- **Interest Rate Peaks:** Rates reached a historical maximum of **36.73%**.
- **The 2025 Correction:** Current data shows a sharp "cool down," with 91-day bills dropping to approximately **16.7%**, signalling a successful pivot in monetary conditions.

3.3 Spread Analysis (The "Wait Bonus")

The **364-Day vs 91-Day Spread** measures market uncertainty.

- **Finding:** In 2023, the spread peaked at **4.5**, indicating that the government was paying a massive premium to attract long-term capital.
- **Current Status:** The spread has narrowed to **1.8** in 2025, suggesting a return to a more stable, "normal" yield environment.



3.4 Seasonality: The December Effect

Seasonality Analysis

Issue Month	2021	2022	2023	2024	2025	Total
January	15.38	14.74	35.74	30.89	29.20	**25.29**
February	14.70	14.37	35.55	29.70	27.75	**24.31**
March	14.80	15.06	23.06	28.43	18.51	**19.55**
April	13.86	17.21	22.63	27.45	16.77	**20.12**
May	14.11	20.52	23.11	26.75	15.81	**20.04**
June	14.09	25.31	24.67	26.56	15.28	**20.80**
July	14.20	27.08	26.57	26.45	14.26	**22.05**
August	13.73	28.38	28.36	26.47	11.89	**21.74**
September	14.27	30.29	29.83	26.68	11.93	**22.05**
October	14.00	32.13	31.31	27.17		**26.81**
November	14.08	35.18	31.71	27.98		**26.54**
December	14.70	35.95	31.36	28.70		**27.40**

A matrix analysis of monthly averages revealed a clear seasonal trend:

- **Highest Yielding Month: December** averaged **27.40%** across the study period.
- **Lowest Yielding Period: Q1 (March)** averaged **19.55%**, suggesting that liquidity conditions are tighter at year-end, driving up rates.

4. CONCLUSION

The analysis confirms that the Ghana Treasury market is highly responsive to macroeconomic shifts. The period between 2022 and 2024 represented a high-volatility "stress test" for the market, where 364-day bills became the dominant short-term investment vehicle with an average yield of **25.1%**. As of late 2025, the market is displaying signs of a healthy recovery, with declining rates and a stabilizing yield spread.

5. RECOMMENDATIONS

1. **For Institutional Investors:** Focus on Q4 entry points (October–December) to maximize yield, as seasonality trends consistently show higher rates during these months.
2. **For Risk Management:** Monitor the 364/91-day spread as a leading indicator of market stress; any spike above 3.0 should be viewed as a signal of tightening liquidity.