Strategic Insights from Ghana's Government Bond Yield Curve March 2025 Report

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Executive Summary

Ghana's government bond yield curve as of March 2025 shows a steep slope at the short end and a flattening beyond the medium term. This structure, estimated using the Nelson-Siegel model reflects ongoing inflation concerns, fiscal pressures and risk premiums demanded by investors. Although the country has made progress on macroeconomic stabilization however investors' sentiment remains cautious. Medium-term maturities currently offer better opportunities relative to long-term government debt. This analysis was conducted using nonlinear least squares fitting across maturities from 0.25 to 15 years. The model captures the dynamics of interest rate term structures through three components: level, slope and curvature.

Nelson-Siegel Model Structure

Theoretical Background

The Nelson-Siegel model estimates the yield $Y(t)$ for a given maturity $'t'$ using the formula:

$$Y(t) = \beta_0 + \beta_1 \left(\frac{1-e^{-\lambda t}}{\lambda t}\right) + \beta_2 \left(\frac{1-e^{-\lambda t}}{\lambda t} - e^{-\lambda t}\right)$$

Figure *1*: Maturity yield

Maturity(Years)	Yield(%)
0.25	15.71
0.5	16.73
1	18.84
4	22.48
5	23.32
6	22.25
7	24.00
8	22.00
9	23.39
10	22.89
11	23.55
12	22.94
13	23.92
14	25.11
15	22.50

Source: (*GFIM-STATUS-REPORT-MARCH-2025*)

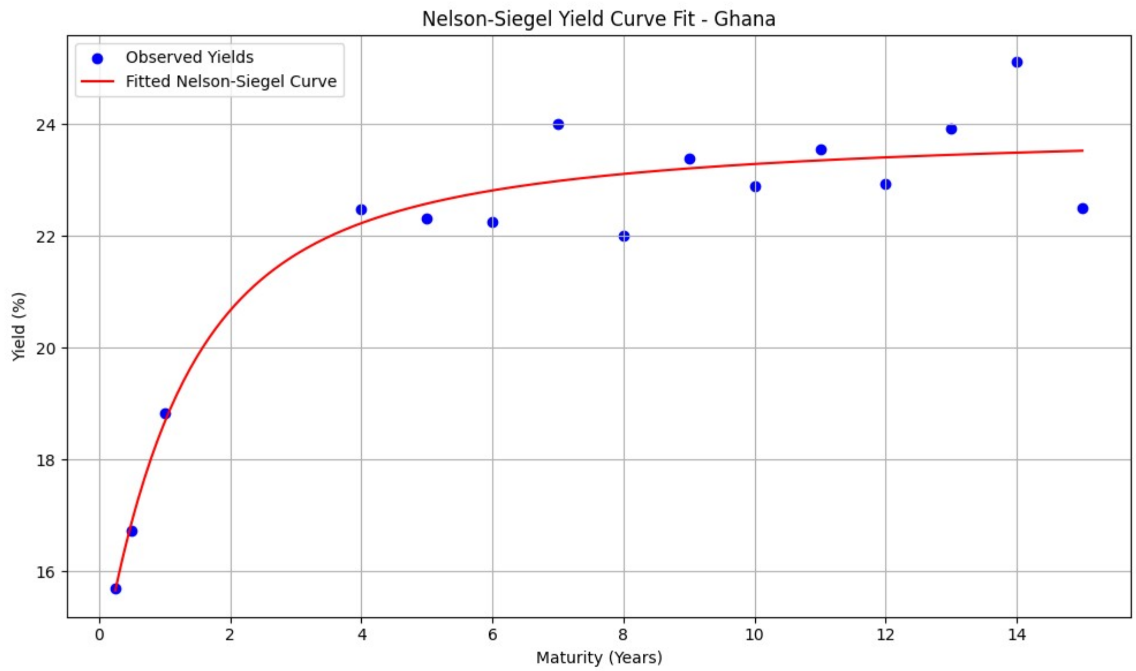

Figure 2: Observed vs Fitted Nelson-Siegel Yield Curve

Key Yield Curve Parameters

Parameter	Estimate	Description
β_0	23.9963	Level: Long-run interest rate floor
β_1	-9.8627	Slope: Short-term rate component
β_2	8.0561×10^{-6}	Curvature: Transitory mid-term movements (insignificant)
λ	0.7205	Decay: Maturity sensitivity of β_1 and β_2

Model fit metrics:
R^2 (Goodness of Fit): 0.9298
Mean Squared Error (MSE): 0.4740

Maturity (Years)	Actual Yield (%)	Fitted Yield (%)
0.25	15.71	15.66
0.50	16.73	16.88
1.00	18.84	18.66
4.00	22.48	22.23
5.00	22.32	22.58
6.00	22.25	22.81
7.00	24.00	22.98
8.00	22.00	23.11
9.00	23.39	23.21
10.00	22.89	23.29
11.00	23.55	23.35
12.00	22.94	23.40
13.00	23.92	23.45
14.00	25.11	23.49
15.00	22.50	23.52

Economic Interpretation

The estimated yield curve suggests that investors expect higher inflation and fiscal pressure in the long term. The long-run rate is anchored near 24%, indicating high return expectations and elevated risk premiums. The steep upward slope in short-term yields is consistent with efforts to stabilize inflation but also signals a lack of confidence in the long-term policy outlook.

The minimal curvature component implies that yield dynamics are driven primarily by expectations about short-term policy and long-run risks. Despite reforms under external programs, Ghana’s bond market still reflects doubts about fiscal consolidation, debt transparency and inflation management.

Strategic Recommendations

1. Ministry of Finance: The ministry should prioritize fiscal consolidation supported by improved domestic revenue mobilization and expenditure control. Transparent issuance calendars and adherence to borrowing limits will also support investors trust.
2. Bank of Ghana: The institution should reinforce the inflation-targeting framework and communicate monetary policy decisions clearly. Policy consistency will help stabilize short-term yields.
3. Investors should also focus on 2–7 year maturities where yields are elevated but relatively less volatile. Longer-term positions should be limited until macroeconomic credibility is restored.
4. Debt Management Office should also consider liability management tools such as switches and buybacks to manage refinancing risks on long-dated, high-yield debt instruments.

Conclusion

The shape of Ghana's yield curve in March 2025 offers a clear message: investors are demanding high returns to hold longer-term government debt. This signals ongoing concerns about inflation, fiscal stability, and broader macroeconomic management. While short- and medium-term securities remain relatively attractive, the steep yield structure points to a lack of confidence in the country's long-term policy direction.

To rebuild trust and reduce borrowing costs, the country must focus on disciplined fiscal management, improve debt transparency and maintain a steady monetary policy that addresses inflation risks. These actions will be critical to easing the long-term curve, attracting stable capital and positioning the economy for more sustainable financing.

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