Decoding the Relationship Between Economic Growth and Fiscal Health:
Insights from Local Governments in North Carolina

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Appendix

Methodology for Computing Brown Index Values

Data for this analysis were sourced from North Carolina's Department of State Treasurer and the Bureau of Economic Analysis. The Department of State Treasurer provided detailed fiscal data including revenue and expenditure metrics, while the Bureau of Economic Analysis supplied economic data such as GDP figures for each county.

The Brown test computation utilized the following key fiscal and economic indicators:
1. Total Revenues: Includes all financial inflows to the county government.
2. Total Expenditures: Sum of all spending by the county government.
3. Debt Levels: Total debt carried by the county government.
4. Revenue-Expenditure Ratios: A measure of fiscal balance.

These indicators were chosen due to their direct relevance to the fiscal health of local governments and their impact on overall economic conditions.

Quartiles were computed for each fiscal year from 2017 to 2022 to account for annual economic fluctuations:
1. Annual Quartile Calculation: For each year, quartiles for each indicator were calculated based on the distribution of values across all 100 counties.
2. Regional Specificity: Quartiles were computed specifically for North Carolina counties to reflect local economic conditions.

Brown Index Computation Steps

1. Calculation of Ratios: Each of the ten ratios required for Brown's 10-point test was calculated using fiscal data from the County Annual Financial Information Report (AFIR).
2. Score Assignment: Each ratio was assigned a score based on its quartile position:
   - First quartile (lowest fiscal health): -1
   - Second quartile: 0
   - Third quartile: 1
   - Fourth quartile (highest fiscal health): 2
3. Aggregate Score: The total Brown score for each county was computed by summing the scores of all ten ratios.

Additional Details on Brown Test Ratios

Ratios used in the Brown test to assess fiscal health, with a focus on those that measure the stability of income and revenue:

- Total Revenues per Population: This ratio calculates the total fiscal revenue collected per resident, reflecting the government's ability to generate financial resources relative to its population size. It is indicative of the local government's economic vitality and fiscal autonomy, providing a snapshot of its revenue-generating efficiency.
- Property Tax or Own Source Tax Revenues/Total Revenues: This ratio measures the proportion of total revenues derived from local sources versus state or federal

contributions. Higher values suggest greater local fiscal control and less dependency, contributing to enhanced revenue source stability.

- Revenue-Expenditure Equilibrium: This ratio compares total annual revenues with total expenditures to assess whether a government maintains a sustainable fiscal balance. Consistency in this ratio over time is key for long-term fiscal health, as it indicates a government's ability to sustain its operations without incurring excessive debt.

Implications for Fiscal Health

The stability and trends observed in these ratios over time provide valuable insights into the fiscal condition of local governments. For instance:

- A declining trend in the **Total Revenues per Population** ratio might signal a weakening economic base or challenges in revenue collection, prompting a need for enhanced fiscal management strategies.
- Improvements in the **Revenue-Expenditure Equilibrium** suggest that a government is achieving a more sustainable balance between its income and spending, which is essential for avoiding fiscal distress and ensuring long-term stability.

The fluctuations in these ratios serve as critical indicators for policymakers and financial officers, providing a quantitative foundation for strategic fiscal planning and proactive management. By closely monitoring these metrics, local governments can identify potential fiscal issues early and implement corrective measures to maintain or restore fiscal health.