Measuring the Fiscal Health of Municipalities

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Problems in Measuring Fiscal Health

- There is an interest in understanding the financial condition of public organizations
  - Ward of impending doom and catastrophe
  - Transparency in government
  - Ability to provide or expand services
- A number of approaches have been adopted to reflect financial condition, but how reflective are they?
- This study tests the efficiency of three fiscal health measurement systems in predicting financial disaster

Background

- A key challenge for municipalities is their ability to meet service commitments and obligations
  - Capacity to provide or expand programs and services
- <u>Financial Condition</u>: The ability of a government to balance its financial obligations with its available revenue streams
- Current approaches to fiscal health
  - Rely heavily upon ratio analysis
  - Frequently tested against economic data

Measurement Systems

- Ratio Analysis
  - Examination of a financial relationship two items
  - No clear measurement is produced
- Brown's 10-Point Test
  - A scoring system built around comparing the performance of a government to others
  - Financial condition as relative
- Wang, Dennis, and Tu's Solvency Test
  - Centers on financial condition across four dimensions of solvency
  - Focuses on standardization

Measurement Systems

Approach	Definition of Fiscal Health	Method of Measurement
Ratio Analysis	Fiscal health as multi-dimensions and situational to the government	Independent selected ratios to reflect various dimensions of a government's health
Brown's 10-point Test	Fiscal health represented as a factor of five financial dimensions	Collection of 10 measures that are scored against a comparison group
Wang, Dennis, and Tu's Solvency Test	Fiscal health reflected by government's solvency	Collection of 11 measures that are standardized for comparison

Data

- Lincoln Institute's Fiscally Standardized Cities
  - 150 municipalities across 48 states for 1977 to 2012
- Measurement of Financial Disaster:
  - Municipal Bankruptcy or Financial Manager
  - 114 instances (about 2% of observations)
- Controls:
  - State allows Chapter 9 bankruptcy filing
  - State can impose an emergency board
- Logit using the Firth Approach
  - Uses penalized likelihood to avoid issues of bias associated with MLE and rare events

	Model 1	Model 2	Model 3	Model 4
Efficiency Ratio	-0.3492			
Debt Service Ratio	0.2676***			
Cash Ratio	-96.9439**			
Current Ratio	38.6711			
Brown's 10-Point Test		0.0159		
FCI			-0.0455	
Cash Solvency				-48.7220***
Budget Solvency				4.3266
Long-Run Solvency				-5.3212***
Service Solvency				2.3506***
Council-Manager	5.0010	4.7838	4.7519	4.8027
Mayor-Council	5.2570	4.9654	4.9497	4.6754
Authority	0.1625	0.1159	0.1013	0.2330
Governor	0.3014***	0.3064***	0.3008***	0.2462**
Midwest	5.6934	4.8533	4.8405	5.2448
Northeast	6.1807	5.1569	5.1684	5.6576
Pacific	4.4534	3.5818	3.5890	3.7107
South	4.8826	4.0472	4.0484	4.2663
Hispanic	0.1575**	0.1722***	0.1736***	0.1811***
Male	0.2392**	0.2337**	0.2249**	0.1501
Aged 0 to 17	2.8569**	4.3415***	4.0432***	5.2341***
Aged 18 to 65	15.1124***	18.3672***	17.6352***	19.5780***
Ages 66+	5.8488***	6.5867***	6.3938***	7.2294***
Constant	5.7179***	14.1734***	13.1794***	15.5604***
Log Likelihood	-310.4519	-325.9145	-326.0923	-293.8733

* $p < 0.10$, ** $p < 0.05$, *** $p< 0.01$

Results

- Ratio Analysis
  - Significant: debt service (+) and cash (-)
  - Insignificant: efficiency and current
- Brown's 10-Point Test
  - No significant relationship
- Wang, Dennis, and Tu's Solvency Test
  - Financial Condition Index: No significant relationship
  - Individual dimensions: cash (-), long run (-) and service (+) significant

Conclusion

- Signs tend to indicate that the approaches we are using reflect something other than financial condition
  - Need additional testing using other data sources
- We need to think through what we actually want to accomplish when we talk about fiscal health and financial condition
  - If we want to truly reflect the financial well-being of a government, then we need to investigate better measurement approaches
  - If we want to reflect financial behavior, our systems may be acceptable