Measuring the Fiscal Health of Urban Local Governments: Conceptual and Methodological Issues

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Four Questions

- Why should we care about the fiscal health of cities?
- Why is it important to *measure* fiscal health?
- Ideally, how should fiscal health be measured?
- What are the major practical difficulties faced in measuring fiscal health?
Why Is the Fiscal Health of Cities Important?

- Urban areas play a key role in driving regional and national economic growth
  - 50% of the world’s population now lives in urban areas
  - The population living in urban areas will exceed 57% by 2025

- Density of economic activity promotes *agglomeration economies*
  - Density lowers the cost of high-end consumption

- Metropolitan areas are the “engines of growth” in most developing countries
Why Is the Fiscal Health of Cities Important? (cont.)

- Health and safety are crucial to the quality of life in cities.
- Effective fiscal institutions that allow the efficient and equitable provision of a wide array of public services are typically a necessary condition for the economic prosperity of urban areas.
- Empirical evidence that metropolitan areas with central cities in poor fiscal health grow more slowly than areas with central cities that are fiscally strong – Haughwout-Inman (2000).
- Economic prosperity depends both on fiscal health and a high level of fiscal performance.
  - Adequate levels of public services at reasonable tax rates require both fiscal health and effective local governance.
Why Is It Important to *Measure* Fiscal Health?

- To assess how the public sector is working in a metropolitan area
- To serve as a foundation for designing intergovernmental transfer systems
  - Massachusetts – Bradbury and Zhao (tomorrow)
  - United Kingdom – local government revenue support grants
  - France – local government grants, Gilbert and Guengant
  - Japan – local allocation “tax”, DeWit
Why Is It Important to Measure Fiscal Health? (cont.)

- To assess the impact of state/provincial government policies on local governments
  - Toronto – Bird and Slack
  - Turin – Piazza and Piperno

- Allows us to recognize metropolitan area fiscal disparities
  - Fiscal disparities are inequitable
  - High levels of fiscal disparity lead to inefficient business and residential location decisions within metropolitan areas, and often to urban sprawl
How Should Municipal Fiscal Health Be Measured?

- Need an objective measure of the *exogenous* factors that determine the ability of local governments to raise revenue to meet the public service needs of their residents
  - Local government officials' actual spending and revenue decisions should have no impact on the fiscal health measure
- The most common approach in the literature is the *fiscal* or *need-capacity gaps*
Need-Capacity Gaps

- Defined as the difference between expenditure need and the revenue-raising capacity
Expenditure Needs

- A measure of the minimum amount of money a government needs to deliver a set of basic, adequate, or “standard” services
Why Do Expenditure Needs Differ Among Local Governments?

- Differences across governments in *service responsibilities*
  - Constitutional or statutory assignments
  - Mandates from higher level governments
  - Sometimes a function of jurisdictional size

- Differences in the *costs* of providing services
  - Differences for exogenous reasons (outside local government control)
Calculating Expenditure Need

\[ EN_i = \sum_j S_j * \text{SR}_{ij} * \text{CI}_{ij} \]

- \( S_j \) “standard” level of public service \( j \) within metropolitan area
  - In principle, \( S_j \) would be average costs of “standard” public service level as determined by policy makers
  - Standard may vary by type of community
    - e.g. sanitation: in rural areas-ventilated pit toilets; in urban areas-water-borne sewage systems; street lighting more extensive in dense urban areas
  - In practice, median per capita spending in metropolitan area(s) may be used
- \( \text{SR}_{ij} \): service responsibility index
- \( \text{CI}_{ij} \): cost index in \( i \) for public service \( j \)
Why Costs Differ Among Local Governments

- Differences in environmental/spatial or geographic characteristics
  - Topography/climate affects water supply
  - Higher cost of road access in places with snow, frequent freezing, torrential rains
  - High density increases fire protection costs
  - Economies or diseconomies of scale
  - If public sectors salaries determined locally, area cost of living
Why Costs Differ Among Local Governments (cont.)

- Socio-economic and demographic composition of resident population
  - Potentially important cost factor for some public services, e.g. education, health care
  - Poverty (of children or of patients) can raise education and health costs
  - Evidence from U.S. that poverty results in increased costs for non-poverty related public services
  - Non-resident use of services--commuters (Piazza and Piperno, 2008)
Empirical Issues in Measuring Expenditure Needs

- How to disentangle government spending between the portion due to “cost disabilities”, local preferences, and inefficiencies

- Determining for each public service, what are the most important cost factors

- Measuring the quantitative impact of each of these cost factors on the costs of meeting service responsibilities
Three Approaches to Estimating Costs

- The estimation of cost functions
- The estimation of expenditure functions
- The “professional judgment” approach
  - Cost estimates or expenditure norms come from a panel of experts (based on national or international best practice)
  - Can also involve a structured case study approach
    - e.g. Indian urban area case studies
Approaches to Estimating Costs

- Estimating *cost functions* requires measures of public good output
  - Approach has been used to estimate costs of education and health care
  - Requires substantial amounts of data and methodology is difficult to explain to policymakers

- Simpler *reduced form* expenditure functions have been estimated when no output data are available
  - This approach has been used in a number of countries, e.g. Sweden
  - Difficult to separate impact of preferences from impact of costs
The “Profession Judgment” Approach to Estimating Costs

- Team of experts defines the set of inputs needed to meet basic/adequate services requirement
- Analysts then price out these inputs to determine costs
- Advantages of approach:
  - Fewer data requirements
  - May provide guidance on best ways to produce public services
The “Profession Judgment” Approach to Estimating Costs

- Disadvantages of approach:
  - Results depend on choice of experts
  - “Best practices” for experts may not be least cost solution, thus not optimal in economic sense (technical efficiency)
  - Better for estimating average costs
  - Need for regular updating
The Use of Case Studies to Estimate Expenditure Needs

- Case study approach attempts to exploit all available information about public service delivery
  - Relies on available data
  - Informed by interviews with local government officials
- Only approach when metropolitan area contains only a few local governments
- May be only feasible approach in developing countries with limited data availability
Cost Index Calculations

- A cost index provides a single measure of the costs of providing standard public services in a local government relative to the costs in the average jurisdiction.

- Can be calculated from a cost or an expenditure function, for each municipality:

  \[ \text{hypothetical spending} = \text{regr. coeff.} \times (\text{avg. value of controls}) + \text{coeff.} \times (\text{cost factor}) \]

- Index = hypothetical spending divided by hypothetical spending for a municipality with average values for the cost factors.
Calculating Revenue-Raising Capacity

- Foundation of any measure of RRC is the economic base of each local government

- Three conceptual approaches
  - Representative Tax System (RTS)
    - Weighted sum of N potential tax bases, where weight for each base = the average tax rate for tax j
    - $FC_{RTS} = \sum_j \tilde{t} \text{BASE}_j$
      - If not all taxes can be used, measure overstates fiscal capacity
      - If only actual tax bases are used, measure underestimates “true” tax capacity
Calculating Revenue-Raising Capacity (cont.)

- **Total Taxable Resources**
  - If data on tax bases are unavailable calculate RRC as a “standard” tax burden on a measure of the size of the local economy, such as Gross City Domestic Product (GCDP)
  - e.g. India case studies

- **Maximum Revenue**
  - Calculate the local tax rate that maximizes revenue, where individual and business mobility creates “revenue hills”
    - difficult to calculate
  - RRC should also includes resources received from intergovernmental grants
The Calculation of Fiscal Gaps

- \textit{Fiscal gap}_i = \text{Expenditure Need}_i - \text{Revenue Raising Capacity}_i

- Fiscal gaps within a metropolitan area or a state/province provide a measure of \textit{relative} fiscal health
  
  - The absolute size of the gap depends on policy parameters: the levels of “standard” public services and the “standard” tax effort used to determine revenue-raising capacity
Long-Run Research Goals

- Conduct studies of local government fiscal health in metropolitan areas in a number of countries using similar methodology
- Develop a set of “best practices” for measuring fiscal health with attention paid to data availability
- Develop recommendations on most important data requirements
- Use results from studies in different counts to determine how fiscal institutions within a metropolitan area
  - taxing authority, mandates, assignment of expenditure responsibilities, intergovernmental grants-in-aid, regional governance –
  contribute to the fiscal health of urban local governments
- Develop policy recommendations designed to improve the fiscal health of urban local governments