

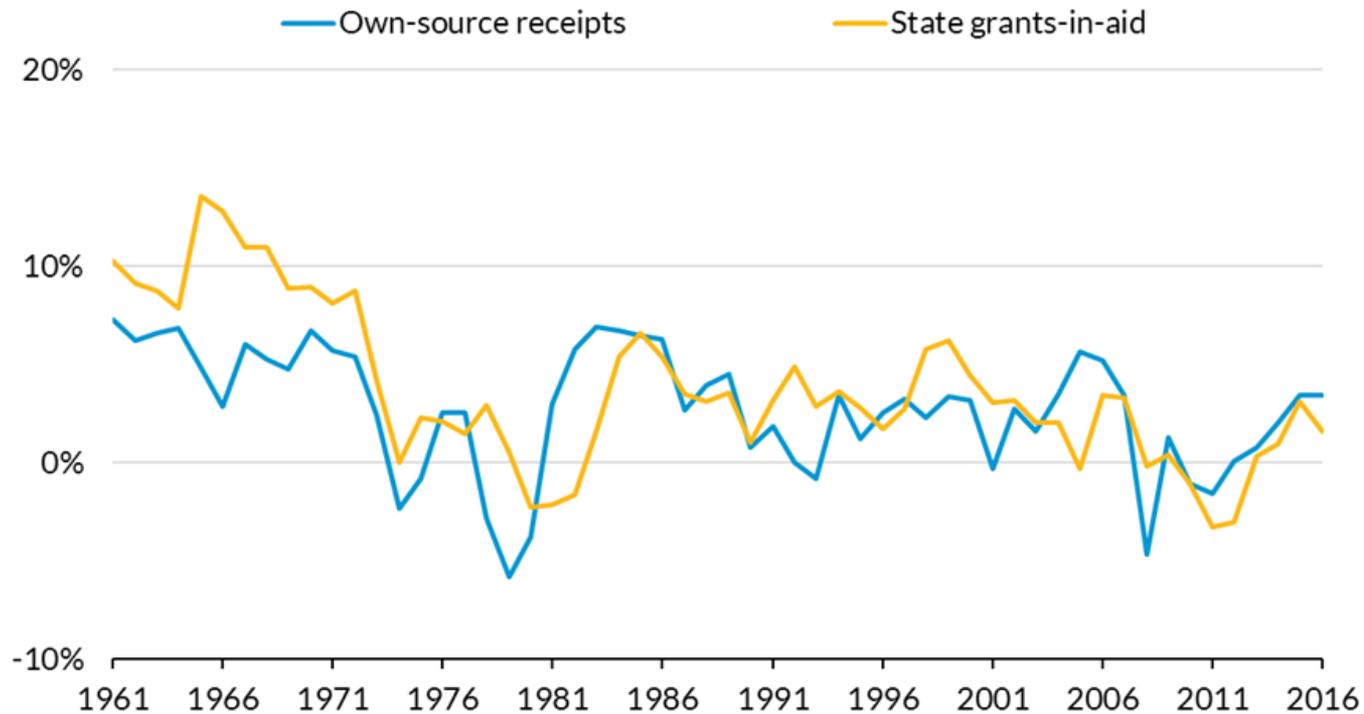


Predicting Municipal Fiscal Distress: Aspiration or Reality?

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Local governments were hit hard in Great Recession

Figure 1: Year-over-Year Change in Major Local Government Receipts

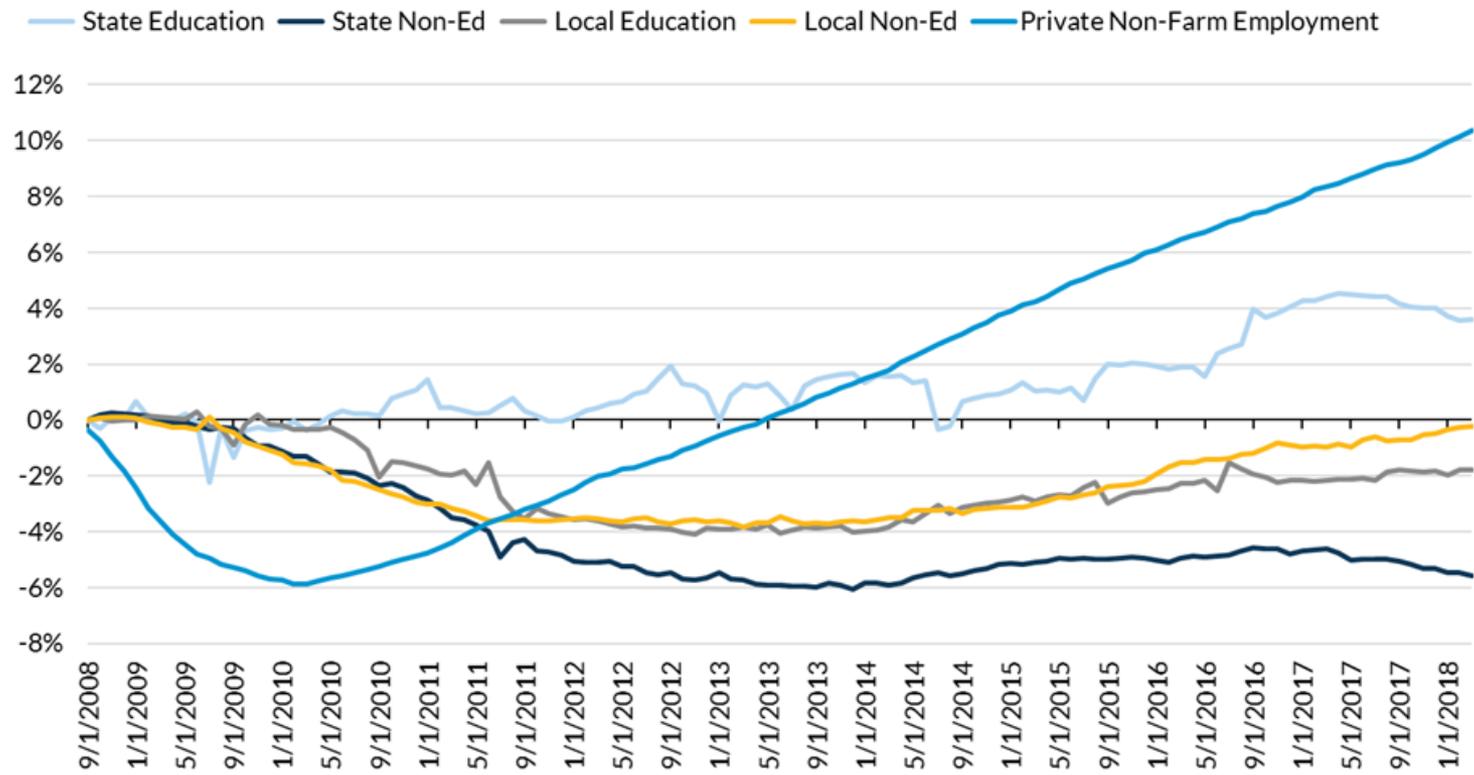


Source: NIPA Table 3.21, converted to real 2016 \$.

Resulting in job losses unlike prior downturns

Figure 2: State and Local Government Employment

Cumulative monthly job loss (%) by sector (Indexed to August 2008)



Source: US Bureau of Labor Statistics, Current Employment Statistics.

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What if ... an Early Warning System?



AP Photo/Rich Pedroncelli



AP Photo/Ben Margot, File



AP Photo/Reed Saxon, File

Complicated by the sheer number and variety of local governments



*Special districts include water districts, fire districts, mosquito abatement districts, and more.

And good data are hard to find

The US Census Bureau collects the most **timely, comprehensive, accurate** data over time. But...

3.12 Special Topics: Statistical Nature of Data

Although the original sources for finance statistics are accounting records of governments, the data derived from them are purely statistical in nature. Consequently, the Census Bureau statistics on government finance cannot be used as financial statements, or to measure a government's fiscal condition.

Source: US Bureau of the Census Government Finance and Employment Classification Manual (2006)

Many possible benchmarks

Category	Concept	Source	Method	Indicators
Economic				
	Index of Center City Hardship	Nathan and Adams (1976)	Urban to suburban ratios, weighted	Unemployment, dependency of population, education, income, crowded housing, poverty
	Indices of Social, Economic and Fiscal Need	CBO (1978)	Composite scores from point-in-time indicators and outside indices	<p>Social Need: Nathan and Adams index, plus unemployment and per capita income</p> <p>Economic: 6 indicators</p> <p>Fiscal effort: tax effort, property tax base, and two comprehensive measures developed by HUD</p>
	Fiscal Capacity	ACIR (1971)	Representative Revenue System	Revenues collected divided by revenue capacity
		ACIR (1977)	Fiscal Pressure	Tax effort divided by change in tax effort
	Need-capacity Gap	Ladd and Yinger (1989), Ratcliffe, Riddle & Yinger (1990), Reschovsky (1993)	Revenue-raising capacity minus standardized expenditure need, expressed as a % of capacity	<p>Standardized expenditure need from costing functions, regressions, and environmental cost factors</p> <p>Revenue capacity is revenue that can be raised by applying a uniform tax burden, as a % of resident income</p>

Alternatives, cont'd

Fiscal & Financial			
Urban Fiscal Strain	Treasury (1978)	Average change in weighted variables; combined with other indices	Population, per capita income, own-source revenue burden, long-term debt per capita, property value (full market)
Fiscal stress warning signs	ACIR (1973)	Based on qualitative evaluation of cities' financial status	One-year operations, continuous operations, working capital, short-term operating loan balance, property tax delinquency, property valuation
Fiscal strain	Clarke and Ferguson (1983)	Measure based on fiscal outputs divided by population indicators. Produces twenty separate indicators.	Fiscal outputs include general expenditures, own revenues, common functions, and debt. Population factors include median family income, population change, and city wealth index
Financial Condition Ratios	Aronson & King (1978)	Focus on debt-service combined a rising ratio of debt service to income	Seven ratios, focused on debt, debt service and income
	Brown (1993)	10-Point Scale	Total revenues/population, own-source General Fund (GF) Revenues /GF revenue, GF sources from other funds/Total GF sources, OpEx/Total expenditures Total revenue/total expenditures, Unreserved GF Balance/GF revenues GF cash and investments/GF liabilities, GF liabilities/GF

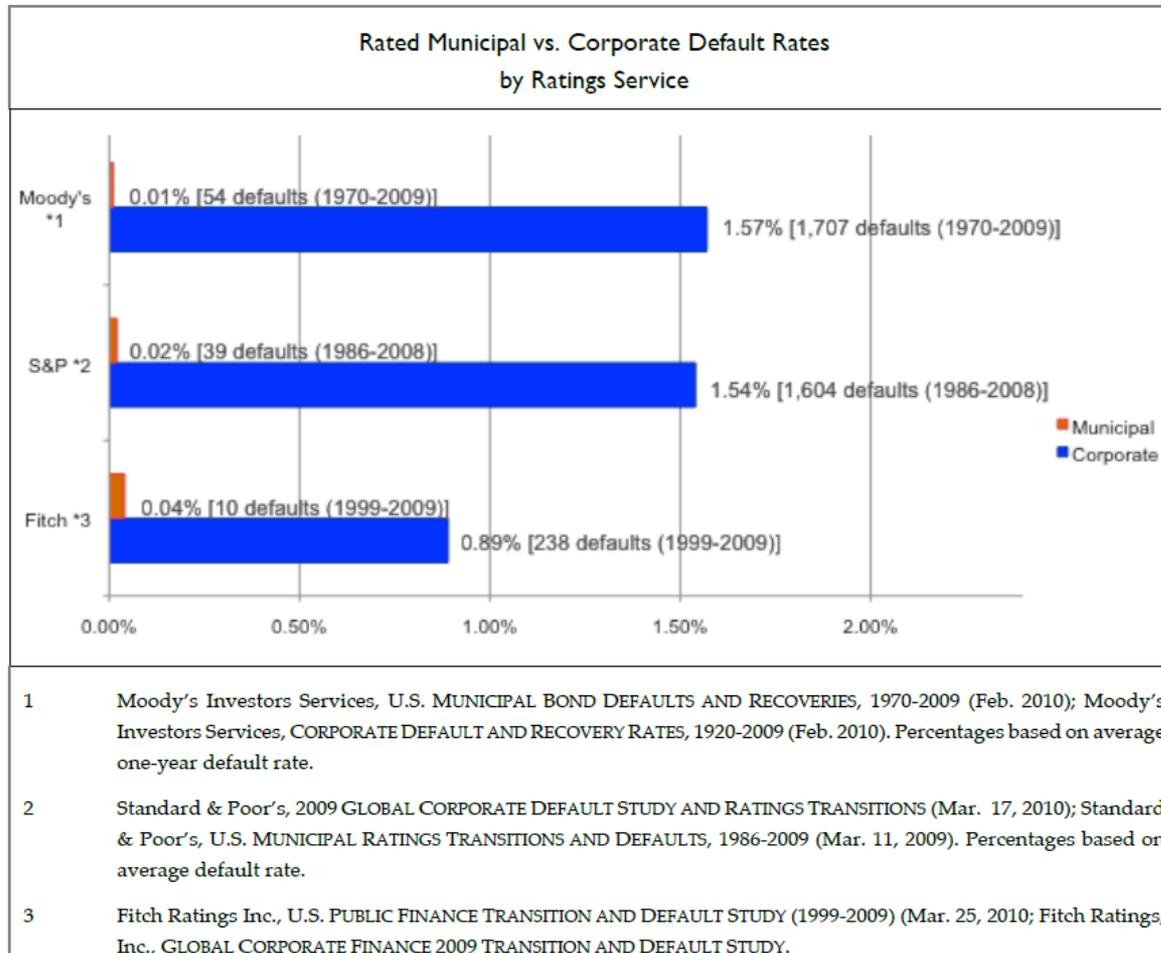
Yet more alternatives

Comprehensive			
Fiscal Trend Monitoring System (FTMS)	International City/County Managers (ICAMA, 1980)	36 individual indicators across 7 categories, measure them each individually over time.	7 categories: Revenue, expenditure, operating position, debt, unfunded liability, capital plant, and community needs and resources
	Groves and Valente (1994)		
	Nolleberger (2003)		
	Groves, Godsey, and Shulman (1981)	ICMA FTMS	Ask city representatives in 50 cities to use and give feedback on ICMA FTMS.
	Hendrick (2004)	Three-dimensional fiscal health measurement.	Revenue wealth and spending need indicators obtained through regression analysis, similar to Ladd and Yinger.
		Spending needs and revenue wealth, balance with the environment, and fiscal slack	Fiscal balance is revenue/wealth and spending/need Fiscal slack is % unreserved fund balance, % capital expenditures, % enterprise income, and % debt service

Financial indicators

Financial Condition Ratio	Formula
<i>Liquidity</i>	
Current ratio	Current assets/current liabilities
Working capital	Current assets – current liabilities
Quick ratio	(Cash + marketable securities + accounts receivable)/current liabilities
Net position ratio	Total net position/expenses
Current liabilities	Current liabilities/total revenues
<i>Solvency</i>	
Debt-to-asset ratio	Total liabilities/total assets
Operating position	Total revenues/total expenditures
Profit margin ratio	Surplus (or deficit)/revenue
Return-on-assets ratio	Surplus (or deficit)/total assets
Continuing services ratio	Unrestricted net assets/total expenses
Fund balance ratio	Unrestricted general fund balance/general fund expenditures
Operating deficit ratio	General fund surplus or deficit/net operating expenditures
Operating expenses	Operating expenditures/total expenditures
<i>Sustainability</i>	
Net worth ratio	Restricted and unrestricted net assets/total expenses
Sustainability ratios	Total revenues, tax revenues, or expenditures/population
Debt service ratios	Debt service expenditure/total revenues or expenditures
Long-term debt per capita	Long-term debt outstanding/population
Pension underfunding	Unfunded pension liability/population
<i>Diversification</i>	
Common size ratio	Line item amount/total amount (e.g., cash to total assets)
<i>Capacity</i>	
Debt-to-assessment ratio	Debt/assessment
Effective tax rate	Taxes (or own-source revenues)/taxable assessment
<i>Risk</i>	
Tax leverage factor	Total operating expenditures/property tax revenue
Risk exposure factor	(Investment revenue + intergovernmental revenue + transfers in)/property tax revenue
Transfer dependency	Transfers/total revenues
Charge-to-expense ratio	Charges for services/total expenses

A problem with prediction: few defaults and bankruptcies



Source: Spiotto (2016)

A new data portal

GovRank recently collected nearly 100,000 government financial reports and manually extracted “top line” figures

	Government Type			
	City	County	State	Total
2009	7,856	2,551	50	10,457
2010	8,460	2,606	50	11,116
2011	9,171	2,632	50	11,853
2012	9,321	2,698	50	12,069
2013	9,066	2,613	50	11,729
2014	5,786	1,914	50	7,750
Total 2009-2013	49,660	15,014	300	64,974
Available 2009-2013	6,957	2,308	50	9,315

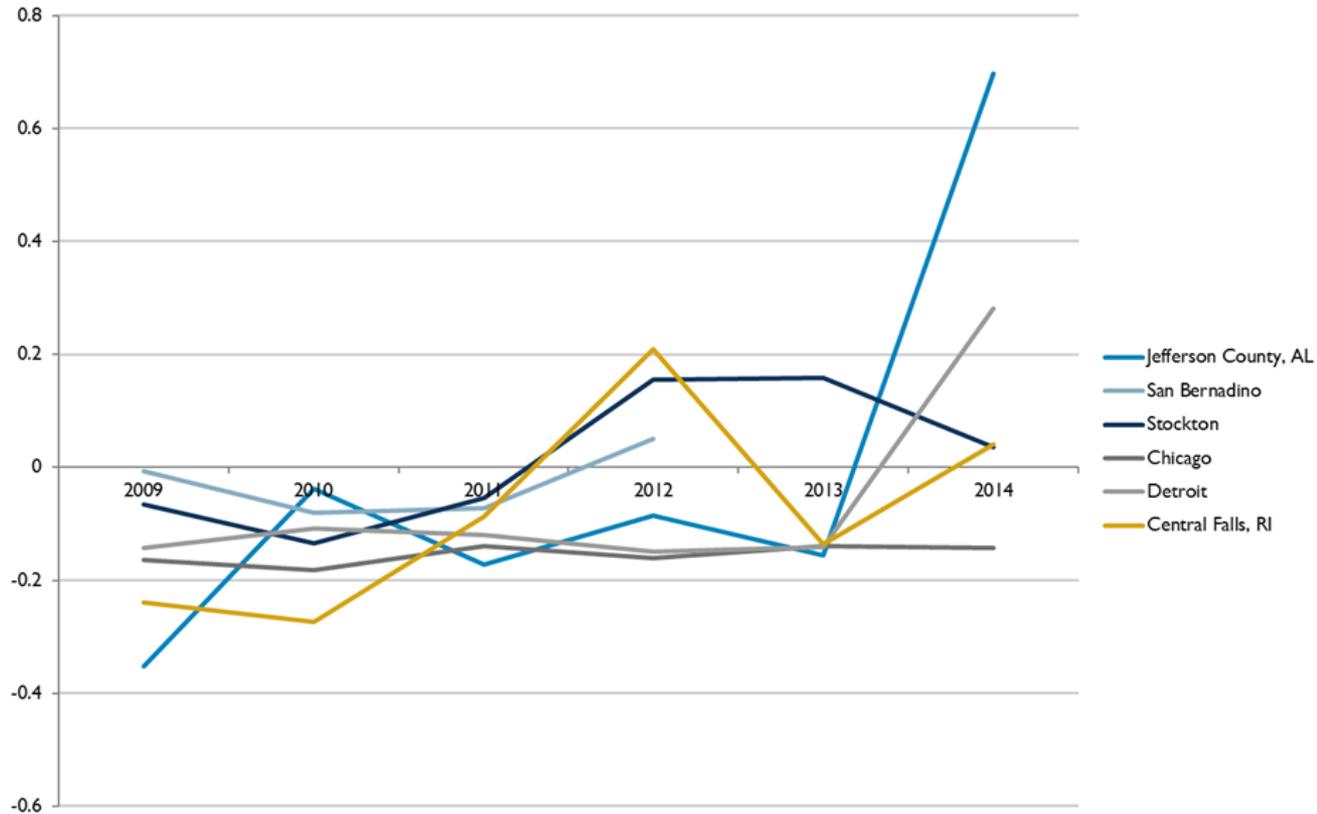
But few observations for larger cities consistently

Governments with Population $\geq 25,000$ Residents

	City	County
2009	1,407	1,438
2010	1,423	1,458
2011	1,436	1,459
2012	1,441	1,482
2013	1,436	1,459
2014	1,346	1,239
Total number of observations 2009-2013	8,489	8,535
Observations with data in all years 2009-2013	1,384	1,373

And not much variation over time

Figure 4: Profit Margin Ratios for Selected Cities



Source: Govrank.org, United States Common Sense

“Stickiness” in financial conditions suggests organizational factors may be at play

% of Cities with 2012 CoG pop >=25,000
N=1,217

Profit margin ratio 2009 vs 2014:			
		Profit margin 2014	
		Bottom 25 %	Top 25%
Profit margin 2009	Bottom 25 %	11.3%	3.1%
	Top 25%	3.7%	11.3%

Debt-to-asset ratio 2009 vs 2014:			
		Debt-to-asset 2014	
		Bottom 25 %	Top 25%
Debt-to-asset 2009	Bottom 25 %	18.1%	0.4%
	Top 25%	0.4%	18.9%

Continuing services ratio 2009 vs 2014:			
		Continuing services 2014	
		Bottom 25 %	Top 25%
Continuing services 2009	Bottom 25 %	17.3%	0.9%
	Top 25%	0.4%	17.2%

Net worth ratio 2009 vs 2014:			
		Net worth 2014	
		Bottom 25 %	Top 25%
Net worth 2009	Bottom 25 %	16.9%	0.4%
	Top 25%	0.9%	17.7%

*Observations include cities with financial health indicators (profit margin ratio, debt-to-assets ratio, continuing services ratio, and net worth) for 2009 and 2014.

Or little variation in economic conditions

Recovery Index 1980 vs 2010:

Cities with populations of at least 100,000
in 1970, 1980, 1990, 2000, or 2010

N=269

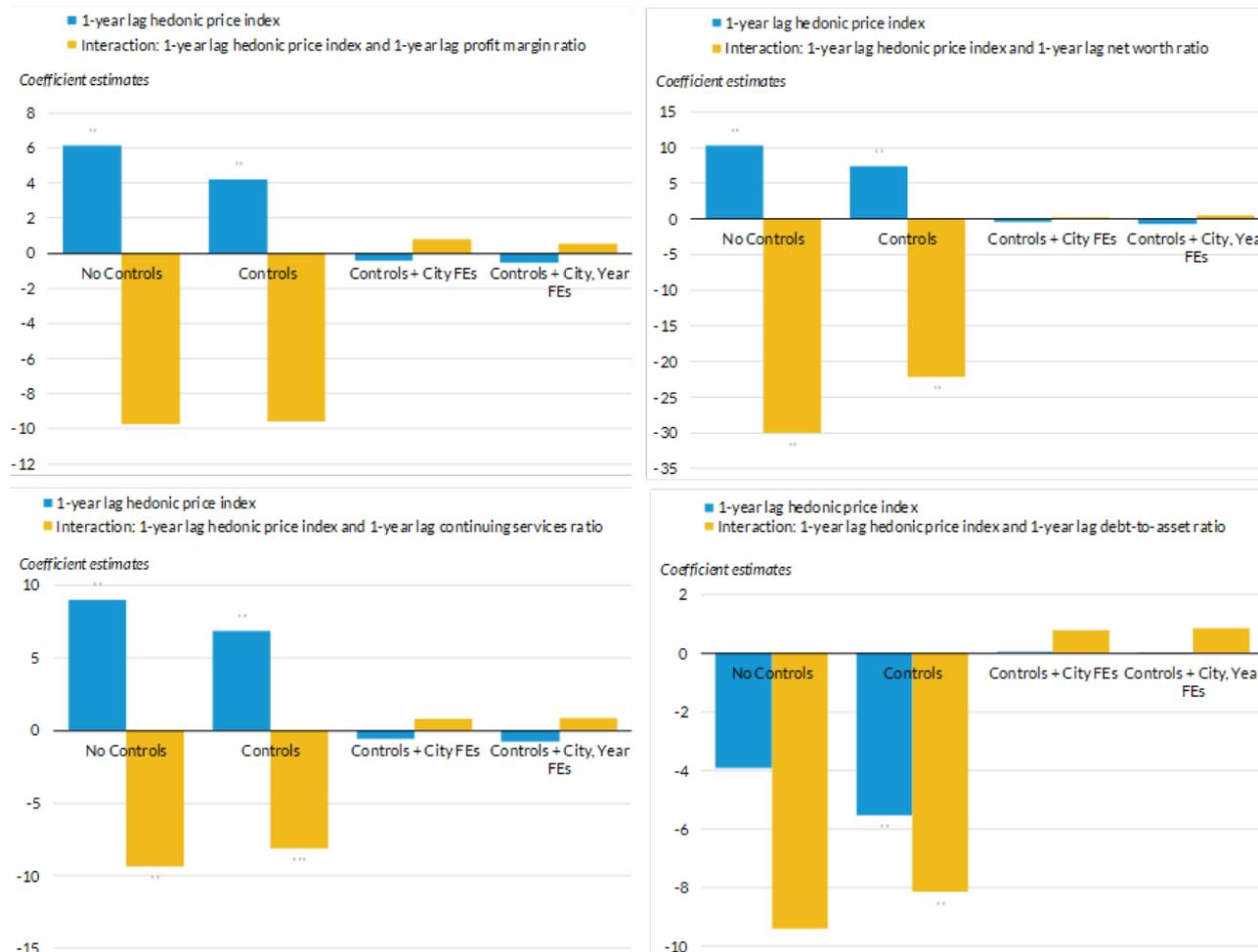
Quartile		Recovery Index 1980			
		1	2	3	4
Recovery Index 2010	1	14.5%	7.1%	2.2%	1.5%
	2	7.4%	8.2%	7.8%	1.5%
	3	1.9%	8.2%	8.6%	6.3%
	4	1.5%	1.5%	6.3%	15.6%

*The distress index in each year is an index that equally weights the z-scores for the percentage change in the number of employed people from 10 years prior (negated), the vacancy rate, the unemployment rate, and median family income (negated). Five cities with distress index values in 2010 but missing values in 1980 are excluded.

Source: Poethig et al (2018)

What we do: look at financial condition and housing crisis

Figure 5: Regressions for Own-Source General Revenues per Capita



Conclusions

- Predictive municipal fiscal health measures are elusive
- Simple tests may be best (~ walk across the room test)
- Are states prepared to act? What would that look like?

What is it?	Who sets up?	Why?	What are powers?
Receiver, manager, overseer	Typically state with local input	Stigma	Restructuring debt & labor contracts
State agency head	Local representation varies (e.g., Miami vs. DC)	Downgrades	Increasing taxes & fees
Financial control board		Contagion	Offering state-backed loans, grants, bond guarantees or reinsurance
		Public welfare	Providing technical assistance
		Econ stability & growth	Dissolving a local government

Source: Adapted from Pew Charitable Trusts, 2013.

- Per Bob Inman: Intergovernmental system, heal thyself



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Thank you

