



**THE NELSON A.
ROCKEFELLER
INSTITUTE
OF GOVERNMENT**

Cracks in the Crystal Ball: Errors in States' Revenue Estimating

Presentation by
Robert B. Ward
wardr@rockinst.org

Federation of Tax Administrators
October 19, 2011

Overview

- ❖ **Errors in states' revenue estimates have worsened during the fiscal crises following the last two recessions.**
- ❖ **From 1987 to 2009, the median estimating error (high or low) was 3.5%. In 2009, the median error was a 10.2% overestimate.**
- ❖ **Increased volatility of PIT (big jumps followed by declines) is a factor in higher error rates**
- ❖ **What might states do differently?**

Methodology

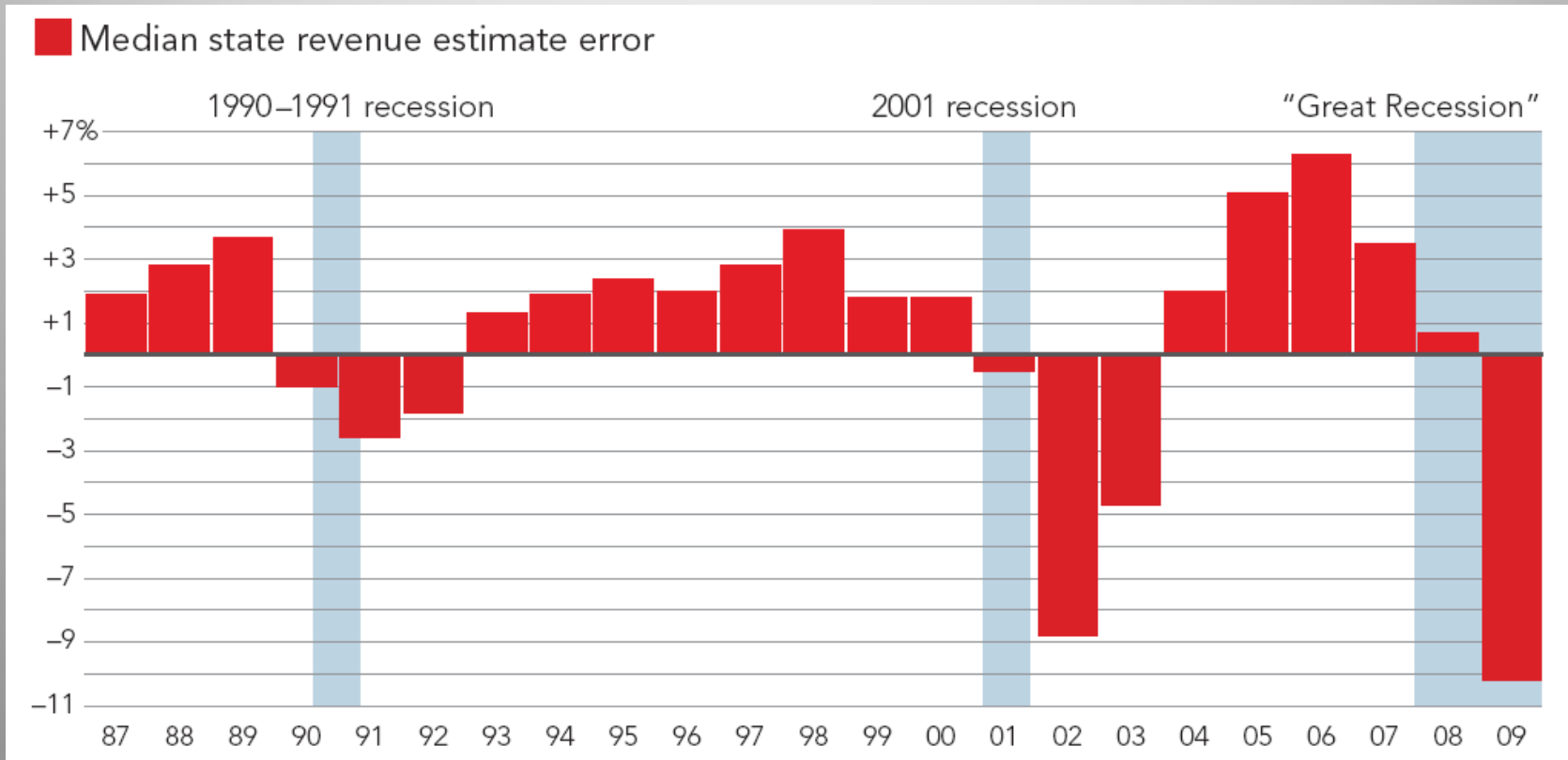
- ❖ **Start with NASBO-NGA *Fall Fiscal Survey of the States* data and compare ‘original estimates’ (forecasts) to ‘current estimates’ (in the fall after end of the FY)**
- ❖ **Eliminate data with anomalies (estimates identical; errors implausibly large)**
- ❖ **Add analysis of Census data on tax revenues, BEA data on personal income**

Data quality, and caveats

- ❖ **NASBO-NGA data are useful because:**
 - **States report data; 'common' definitions**
 - **Cover all 50 states in most years**
 - **Cover 20+ years, and 3 business cycles**
- ❖ **Still, any analysis such as this is imperfect**
 - **Hard to correct for tax system variations**
 - **By definition, forecasting is inexact**
 - **Individual state findings require caution; there may be reporting inconsistencies**

Estimating errors have grown larger

Median percentage error for state revenue estimates, 1987-2009



Why does this matter?

- ❖ When revenues fall below forecast, midyear cuts to important programs may be required
- ❖ Even a 1% error makes a big difference – policymakers struggle over fractions of 1%
 - E.g., in Montana, 1% = 1/2 of the judicial budget
- ❖ Errors tend to bunch, 2-3 years in a row
- ❖ ‘Positive’ errors can cause problems – unsustainable tax cuts & new programs

More states have seen large errors

5% or larger shortfalls from forecast become more common

Fewer states getting it right

Percentage of forecasts off by 5% or more

■ Shortfalls ■ Overages

1990 to 1992: 3 years of fiscal crisis



2001 to 2003 3 years of fiscal crisis



2009: The first significant year of the ongoing fiscal crisis



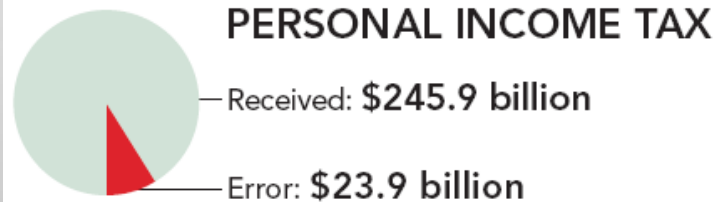
Errors more often are underestimates

- ❖ Over our 23-year study period, the typical state underestimated revenue 16 times
- ❖ Average error was 1.5%, about \$10B (2009 \$)
- ❖ During most recent economic expansion, 36% of forecasts were under actual revenue by 5%+
- ❖ Budget staffs err on the conservative side, which is probably a good thing

FY 2009 shortfalls from forecast

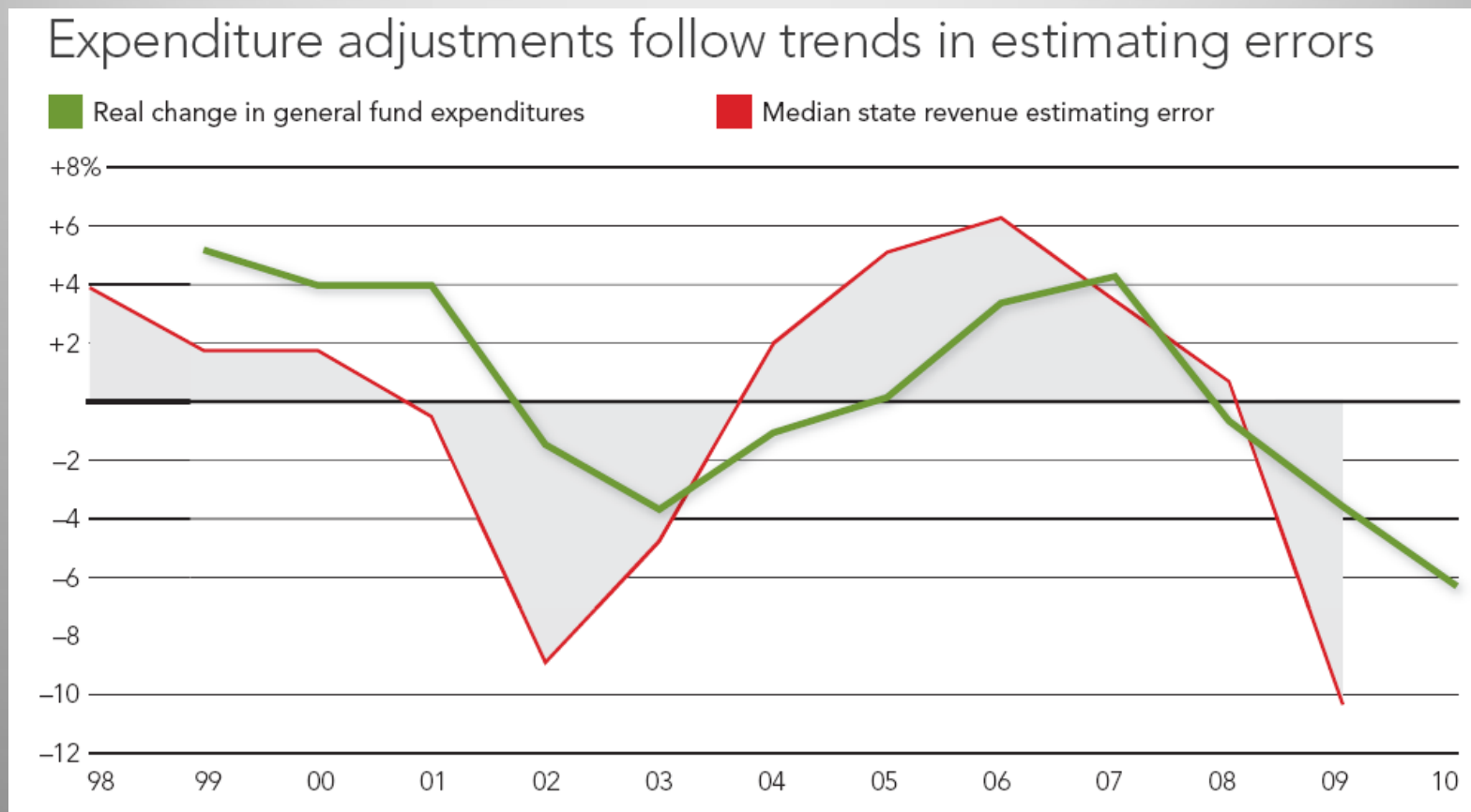
Great Recession brought large shortfalls in each major tax

Scale of errors in 2009

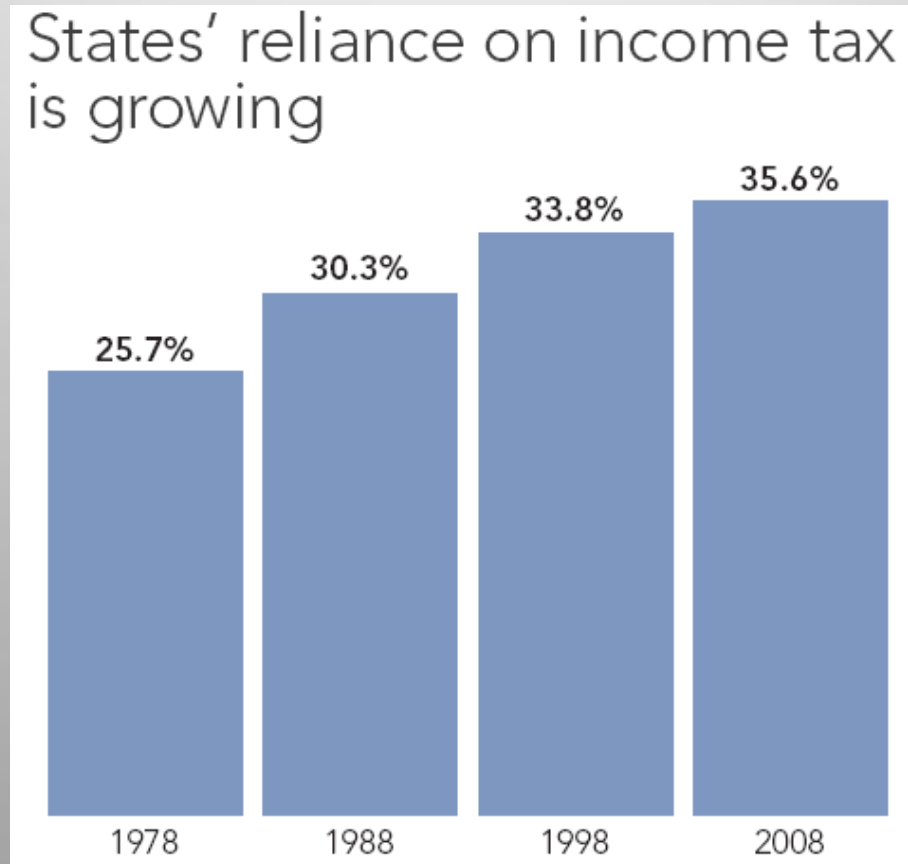


Typically, a lagged impact on spending

State budgets respond 1-2 years after revenue turns



A key factor: Rising reliance on PIT



Varying dependence on capital gains

Boyd's index of state dependence on capital gains

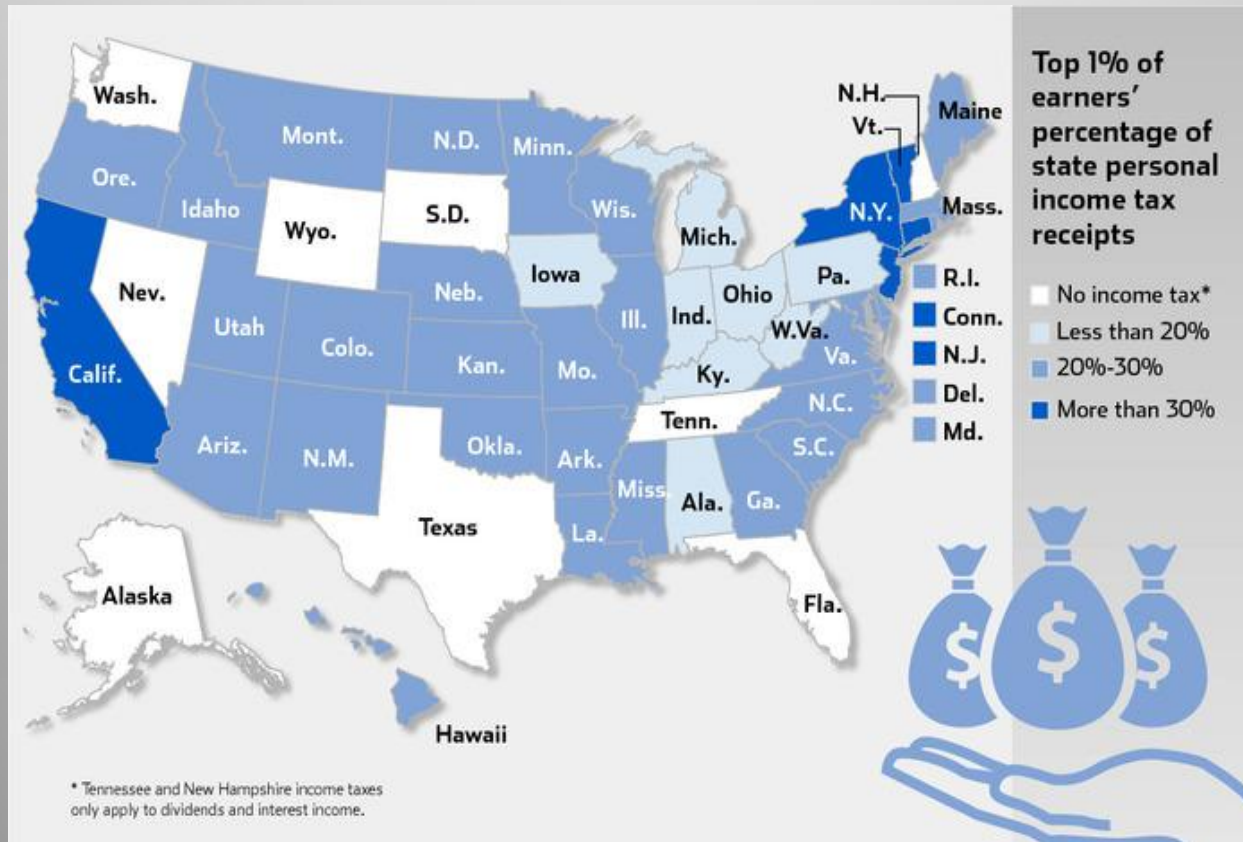
	Capital gains as share of AGI, 2007	PIT as share of taxes, 2009	Rank, capital gains share & top rate together
California	10.7%	44%	1
New York	13.5%	57%	2
Idaho	10.3%	37%	3
Oregon	8.9%	73%	4
New Jersey	7.9%	39%	5

Remainder of top 10: Maine, Connecticut, Massachusetts, Vermont, Nebraska

*Rhode Island had the lowest capital gains dependency among PIT states.
Others in bottom 10: RI, WI, IN, NM, PA, ND, MI, MS, IL, WV*

Dependence on high-earning PIT payers

WSJ: Percentage of PIT receipts from top 1% of earners



Narrowing of the tax base

- ❖ **Along with dependence on volatile PIT:**
 - **Sales tax is more stable than PIT, but its base has narrowed as services become a larger share of the economy and many retail sales escape taxation**
 - **States and businesses have both worked to narrow the base of corporate income taxes**
 - **Some states depend heavily on natural resource taxes, which can be very volatile**

What about the estimating method?

- ❖ **‘The methods and systems states use to estimate revenue are not significantly linked to the size of errors,’ report finds**
 - **Regression analyses found little relationship between larger or smaller errors, and particular approaches to development of estimates or tax collection**
 - **Similarly, no significant relationship between use of consensus forecasting and size of errors – although data are limited**

How to deal with inevitable errors?

- ❖ One best practice is engaging in ongoing analysis of errors, as CBO does
 - **Rudolph Penner has written on this**
- ❖ Adjusting estimates close to budget adoption
- ❖ Data available to us make it hard to determine whether consensus forecasting improves accuracy; but it can help policymakers focus on policy

The big issue: Managing volatility

- ❖ Revenue estimators can't overcome volatility in the economy and tax systems
- ❖ Policy makers need to consider:
 - Boosting rainy-day funds
 - Fiscal devices to limit reliance on volatile taxes
 - Spending limits linked to revenues
 - DE, IA, MS, OK, RI limit budget to 95-98% of forecast
- ❖ How to educate policymakers and the public?

Obtaining a copy of the report

- ❖ Available on FTA conference website
- ❖ Go to www.rockinst.org and search “crystal ball”
- ❖ Send me an email or call:
 - Robert Ward, wardr@rockinst.org
 - 518-443-5831