FTA/NASBO Session on Revenue Volatility:

Revenue Cyclicality and State Policy Options

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State tax revenues have always responded to the business cycle

- Increasing when times are good and falling when times are bad
  - Overall revenue responsiveness +0.9 (1980-2013:Q2)
    - If economic growth increases by 1 percentage point, revenue growth increases by 0.9 percentage points.

- Responsiveness differs by tax in question
  - Individual Income Tax +1.2
  - General Sales Tax +0.9
  - Corporate Income Tax +2.4
  - Other +0.5
Something seems to have changed

- Revenue response in past two recessions appears to be disproportionate. Larger than we would have anticipated based on past history
  - 2001 recession, a brief and shallow recession led to a far larger fiscal crisis
  - 2007 recession, a substantial recession led to a major fiscal crisis
This responsiveness has increased over time
We test for a structural break and date it to 2000.

We run the following regression

\[ \Delta \ln R_{i,t+4} = \alpha_1 + \alpha_2 \text{break} + \beta_1 \Delta \ln EC_{i,t+4} + \beta_2 [\text{break} \times \Delta \ln EC_{i,t+4}] + \epsilon_{i,t+4} \]

We find

- Total tax revenue: Pre-2000 0.7 Post-2000 1.4
- Sales tax revenue: Pre-2000 0.9 Post-2000 1.1
- **Individual Income:** Pre-2000 0.6 Post-2000 2.2
- Corporate Income: Pre-2000 1.9 Post-2000 3.8

Not a switch from sales to income tax
- Sales and autos?
What Happened to Make the Individual Income Tax Change?

- **Tax Base or Tax Rates**
  - **Tax Base (What we tax)**
    - Measured using data on income by state from the IRS, Statistics of Income (From Federal Tax Returns, 1979-2011)
      - Consistently measured across state and time, but not the chosen base in all states.
    - Cyclicality of income has about doubled
      - Total Income: Pre-2000 0.7 Post-2000 1.1
      - Wage and Salary Income: Pre-2000 0.6 Post-2000 0.7
      - Investment Income: Pre-2000 0.5 Post-2000 5.8
    - What happened with investment income (dividends, interest, realized capital gains)
      - Stock market dynamics
      - Capital gains tax rates
      - Fiscal cliff
What Happened to Make the Individual Income Tax Change?

- Tax Rates (How we tax)
  - Data from National Bureau of Economic Research (NBER) TAXSIM
    - Measure of state tax policy divorced from actual income dynamics
  - Tax Rates had traditionally been countercyclical (This stabilizes revenues over the business cycle)
    - Prior to 2000:
      - Maximum Marginal rate wages -0.9
      - Maximum Marginal rate capital -0.6
      - Average Marginal rate wages (based on a fixed income distribution) -0.5
      - Average Marginal rate capital (based on a fixed income distribution) -0.5
      - Top Marginal Rate -0.5
  - Tax Rates became less countercyclical especially on wages
    - Since 2000
      - Maximum Marginal rate wages -0.2
      - Maximum Marginal rate capital -0.5
      - Average Marginal rate wages (based on a fixed income distribution) -0.1
      - Average Marginal rate capital (based on a fixed income distribution) -0.5
      - Top Marginal Rate -0.2
  - What happened to tax rates
    - Politics? I call this the Florio effect (1993 election)
Break Down Between Rates and the Base

- Two forces working in the same direction
  - Investment income, tax rates on wage and salary income
- We do some calculations to divide increases in the cyclicality of revenues to the rates and to the base
  - Issue is how do you account for the increase in effective tax rates during booms which increase more than legislated rates due to the progressivity of the tax system.
  - If we attribute this increase in effective rates to the base and only assign true legislated policy changes to rates
    - 29% of increase due to rates/policy
    - 71% of increase due to base/income dynamics
    - 100% of the level of cyclicality post 2000 is due to the base
    - Rates are now neutral
      - Historically rates worked in the opposite direction
# State by State Analysis

(Level of post-2000 cyclicalit)
Is this a problem?
- Balanced budget restrictions
- Yes. Demands for state services increase during recessions
  - Medicaid, UI, Higher education

What to do
- Spend less when the economy is bad
- Tax more when the economy is bad
- Ask Washington for help when the economy is bad
- Be less generous to local governments
- Save for recessions
  - Rainy Day Funds – These could be much more effective and will need to be bigger.
    - We may learn something from localities.
  - Massachusetts
    - Capital gains tax revenue over $1B gets deposited in rainy day funds.