

Revenue Cyclicalilty and State Policy Options

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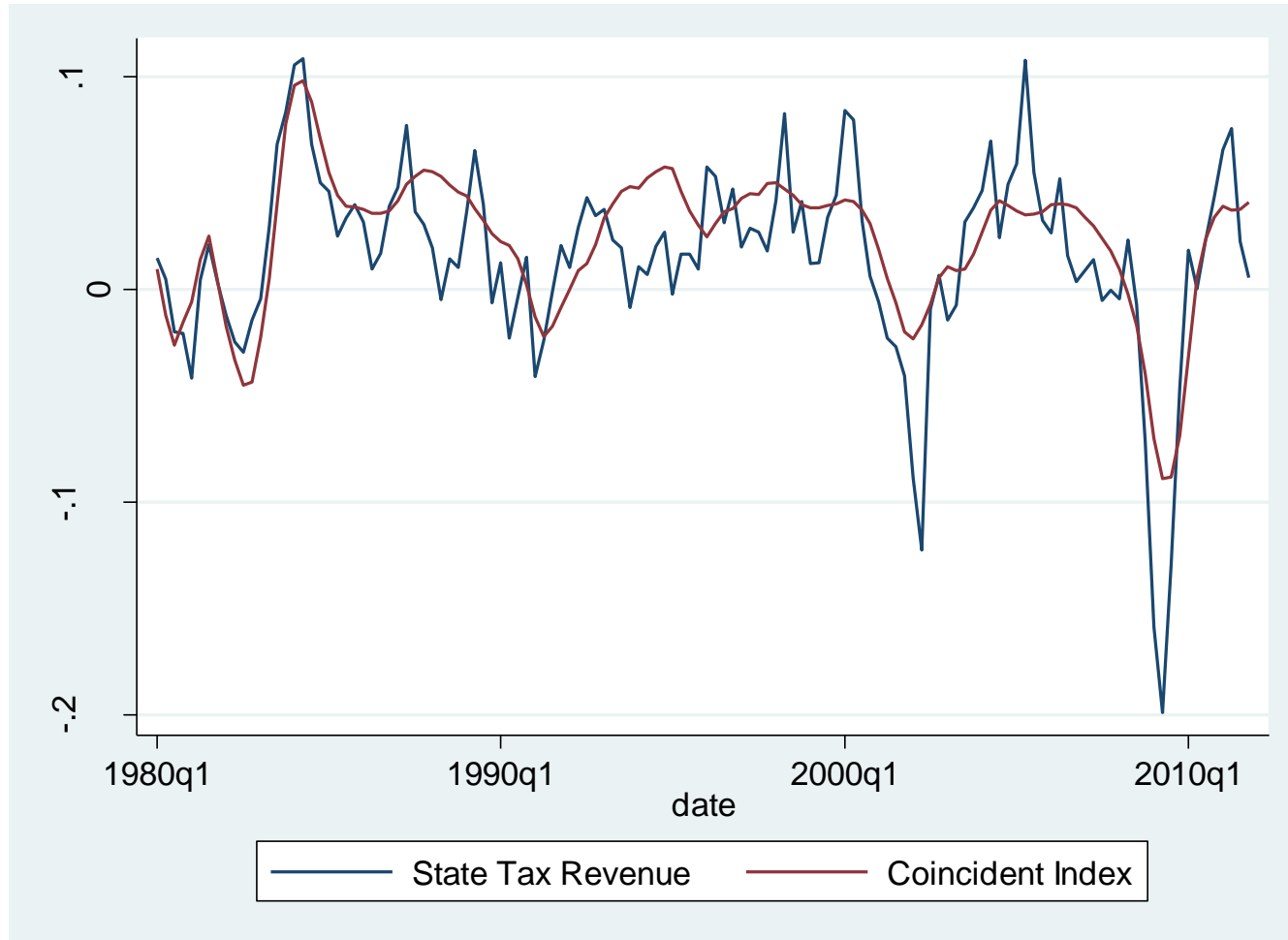
State tax revenues have always responded to the business cycle

- Increasing when times are good and falling when times are bad
 - Overall revenue responsiveness +0.9 (1980-2011)
- Responsiveness differs by tax in question
 - Individual Income Tax +1.1
 - General Sales Tax +0.9
 - Corporate Income Tax +2.3
 - 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



This responsiveness has increased over time

- We test for a structural break and date it to 2000.
- We run the following regression
 - $$\Delta \ln R_{i,t+4} = \alpha_1 + \alpha_2 \text{break} + \beta_1 \Delta \ln EC_{i,t+4} + \beta_2 [\text{break} \times \Delta \ln EC_{i,t+4}] + \varepsilon_{i,t+4}$$
 - We find
 - Total tax revenue: Pre-2000 0.7 Post-2000 1.3
 - Sales tax revenue: Pre-2000 0.8 Post-2000 0.9
 - **Individual Income: Pre-2000 0.6 Post-2000 2.1**
 - Corporate Income: Pre-2000 1.9 Post-2000 3.8
 - Not a switch from sales to income tax

What Happened to Make the Individual Income Tax Change?

- Tax Base or Tax Rates
 - Tax Base
 - Measured using data on income by state from the IRS, Statistics of Income (From Federal Tax Returns)
 - Cyclicalities of income has about doubled
 - Total Income: Pre-2000 0.7 Post-2000 1.0
 - Wage and Salary Income: Pre-2000 0.5 Post-2000 0.7
 - Investment Income: Pre-2000 0.5 Post-2000 5.6
 - What happened with investment income (dividends, interest, realized capital gains)
 - Stock market dynamics
 - Capital gains tax rates

What Happened to Make the Individual Income Tax Change?

- Tax Rates
 - 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 -0.8
 - Maximum Marginal rate capital -0.6
 - Average Marginal rate wages -0.5
 - Average Marginal rate capital -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 -0.6
 - Average Marginal rate wages -0.1
 - Average Marginal rate capital -0.5
 - Top Marginal Rate -0.2
 - What happened to tax rates
 - Except for Average Effective rates, this explicitly measures policy
 - 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 cyclicity of revenues to the rates and to the base
 - Issue is how do you account for the increase in rates that occurs when the economy improves due to the progressivity of the tax system.
 - If we attribute this increase in rates to the base and only assign true legislated policy changes to rates
 - 28% of increase due to rates/policy
 - 72% of increase due to base/income dynamics
 - 100% of the level of cyclicity post 2000 is due to the base
 - Rates are now neutral
 - Historically rates worked in the opposite direction

State by State Analysis

(States Represented and Have Broad Based Income Tax)

		Cyclicity Pre-2000	Increase in Cyclicity Starting in 2000	Level of Cyclicity Post-2000	Fraction of Increase Attributable to Base	Fraction of Increase Attributable to Rates
US		0.432**	1.795***	2.227	0.718	0.282
AL		0.419***	1.241***	1.660	2.549	-1.549
CT		-4.961***	8.824***	3.863	0.156	0.844
GA		0.938**	1.415**	2.353	1.042	-0.0420
ID	▲	0.473	1.498**	1.971	0.953	0.0465
IN	▲	0.258	1.355**	1.613	0.930	0.0703
KY		0.603**	0.423	1.026	-1.564	2.564
MD	▲	0.127	1.998**	2.125	0.842	0.158
MI		0.274*	1.243***	1.517	0.495	0.505
MO	▲	1.019	1.637**	2.656	0.956	0.0441
NE		0.484**	2.756**	3.239	0.767	0.233
NM	▲	11.85	-7.702	4.152	0.904	0.0962
NC		0.804***	1.405***	2.208	1.004	-0.00376
ND	▲	4.941	-0.855	4.086	6.724	-5.724
OR		0.273**	1.395**	1.669	0.663	0.337
RI	▲	0.105	1.396***	1.501	0.455	0.545
VA		0.760*	2.245***	3.005	1.049	-0.0491
WI	▲	1.024	1.009	2.034	0.626	0.374

Policy Options

- Is this a problem?
 - Balanced budget restrictions
 - Yes. Demands for state services increase during recessions
- 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
 - Save for recessions
 - Rainy Day Funds – These could be much more effective
 - We may learn something from localities.
 - Massachusetts
 - Capital gains tax revenue over \$1B gets deposited in rainy day funds.