



State Tax Measures and Revenue Growth through and Post-Crisis

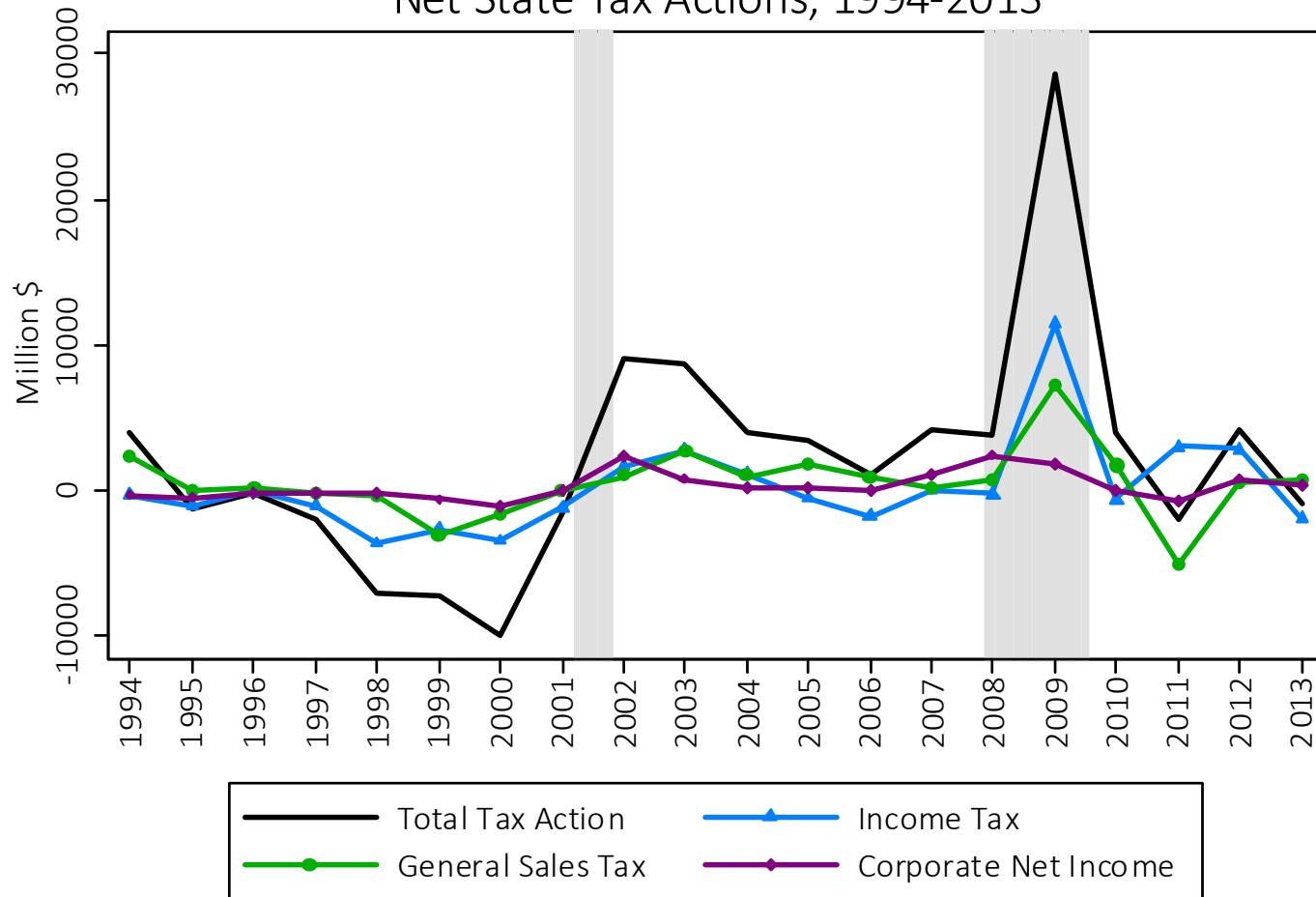
Carolyn Bourdeaux, Rahul Pathak, Sally Wallace

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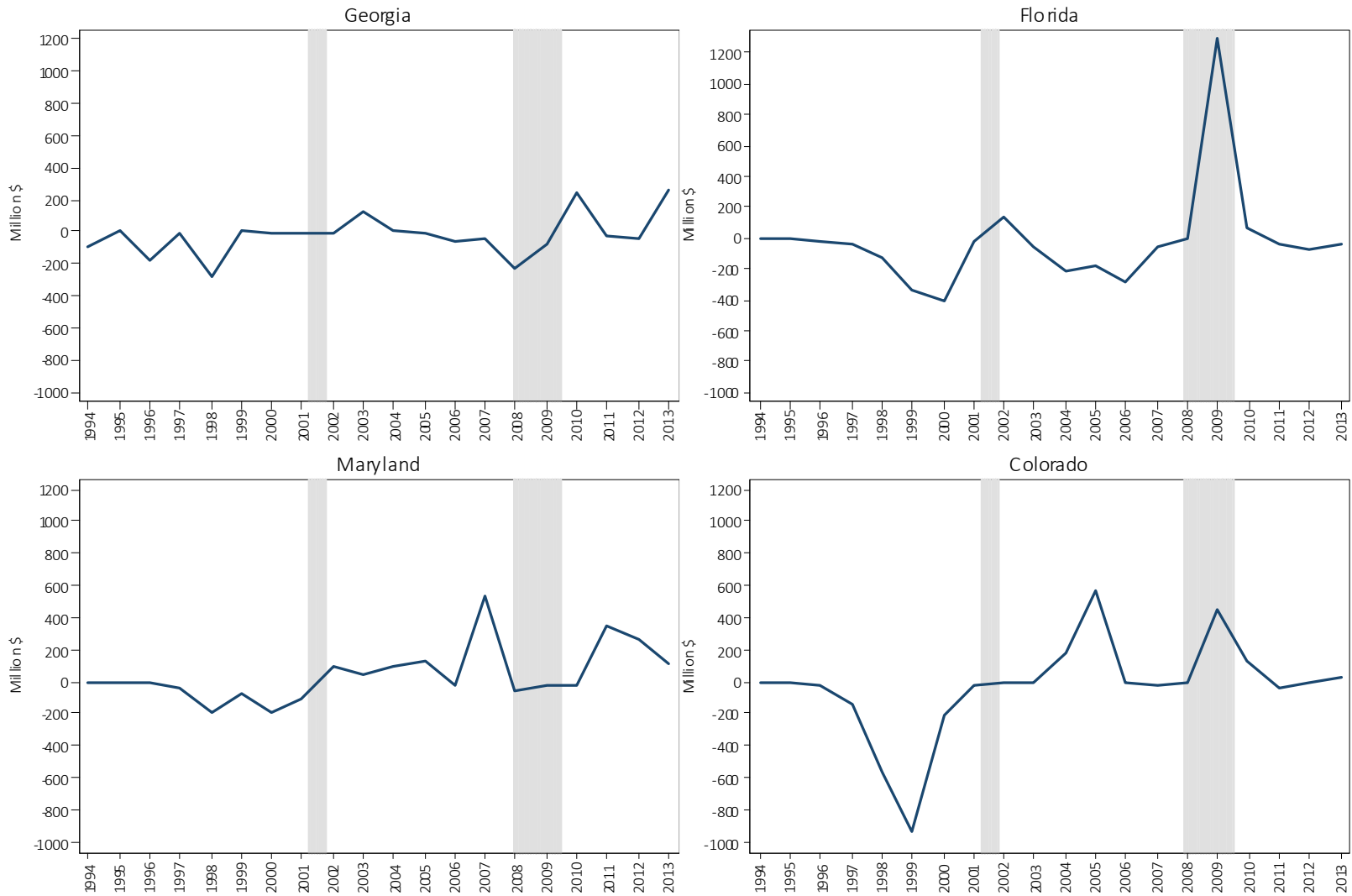
At an aggregate level, state tax policy does respond to the recessions

Net State Tax Actions, 1994-2013

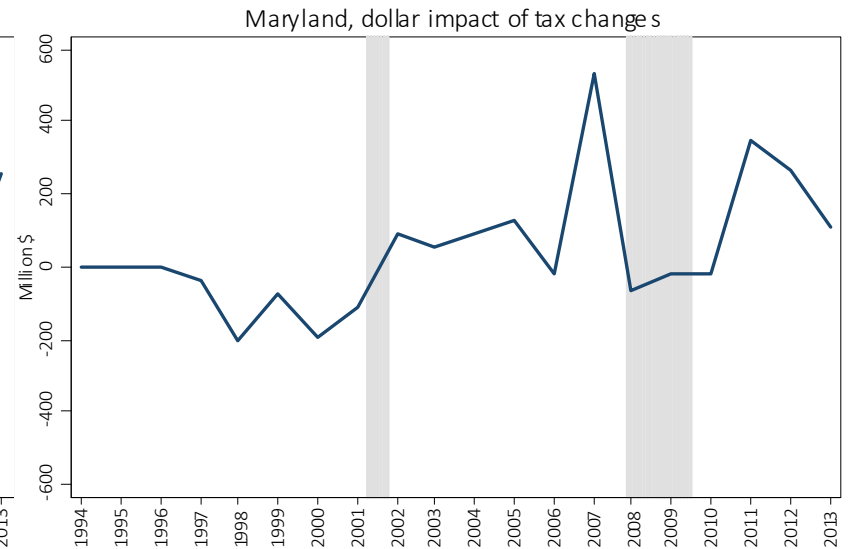
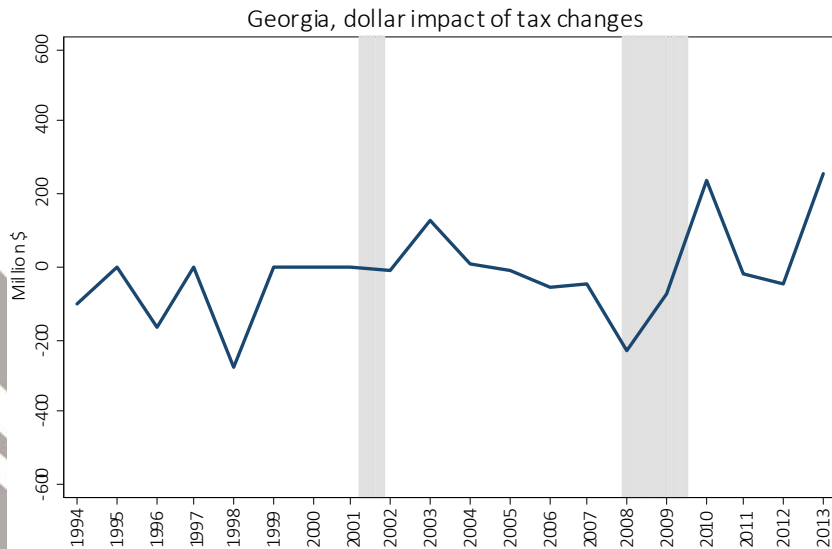
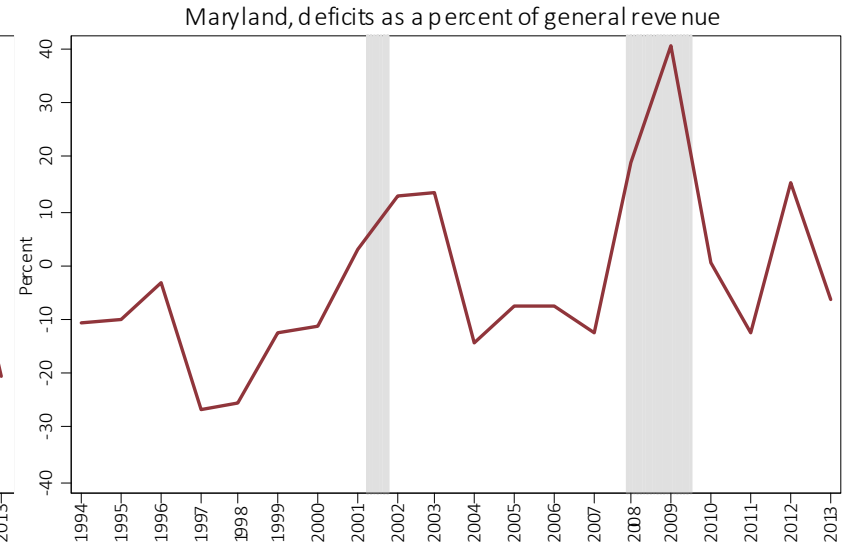
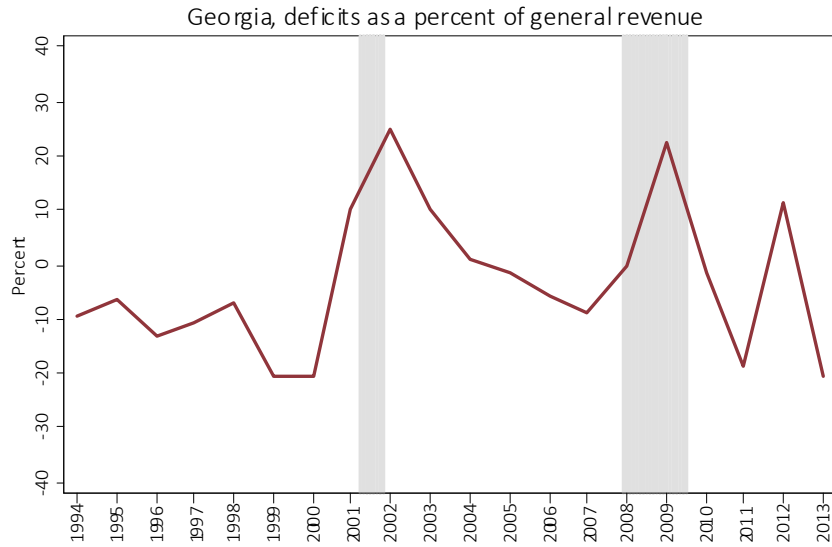


Source: State Tax Actions Database, NCSL and Pew Charitable Trust

And, there is significant interstate variation in state response

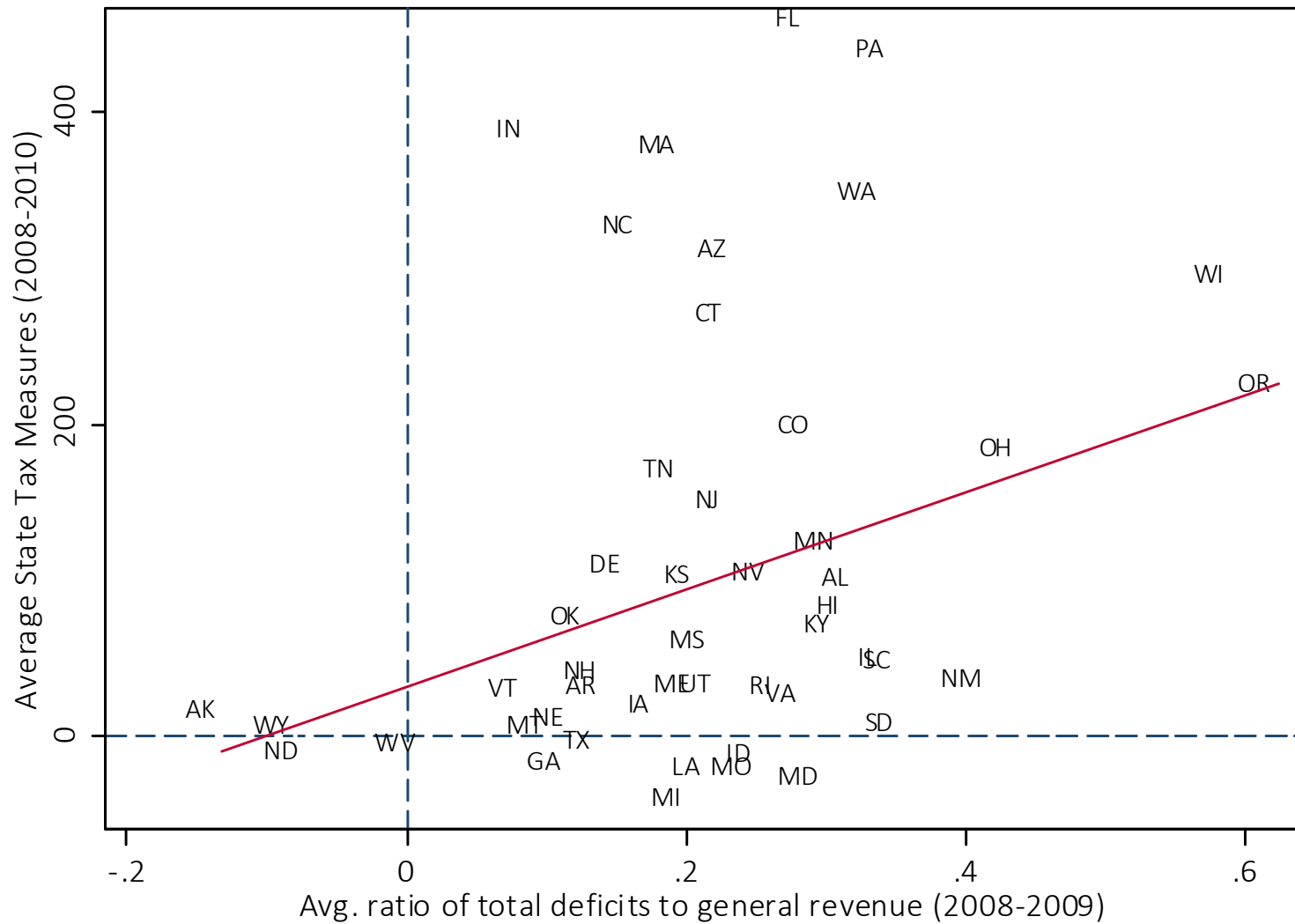


Tax measures often responds to deficits and stress





Significant correlation between stress levels and tax actions



Note: California and New York excluded because of outlier values

***Does the level of stress coming into the recession
and corresponding tax policy response impact actual
revenue recovery?***

		Relative Level of Fiscal Stress	
		HIGH STRESS	LOW STRESS
Reform Type	TAX DECREASE - MINOR	D1	D2
	TAX DECREASE - MAJOR	D3	D4
	TAX INCREASE – MINOR	D5	D6
	TAX INCREASE - MAJOR	D7	D8



Previous Research

- Several studies have explored the factors that explain state and local response to the recessions.
 - *Stress levels*
 - *Tax structure*
 - *Economic factors*
 - *Political factors*
 - *Fiscal institutions*

(Poterba, 1994; Bartle, 2001; Finegold et al., 2003; Giertz and Giertz, 2004; Mattoon & McGrahanan, 2012; Jonas, 2012; Campbell & Sances, 2013; Buschman and Sjoquist, 2013)

- Limited attention to the relationship between tax response and actual revenue recovery, particularly after the Great Recession.

(Alm & Sjoquist, 2014)



Data Sources

- *Information on State Tax Actions*
The Pew Charitable Trusts and National Conference of State Legislatures.
- *Information on State Finances*
Census of State and Local Governments and the Tax Policy Center.
- *Information on Controls*
BEA, BLS, Dept. of Health and Human Services, Berry et al. (2010)

Methods

Diff-in-Diff estimates:

Long term recovery = f (tax reform type, level of stress, population composition, economic factors, fiscal factors, political factors)

Choice of years:

Stress levels : FY2007-FY2008
Tax Action : FY2009-FY2011
Recovery Ratio : FY2013/FY2007

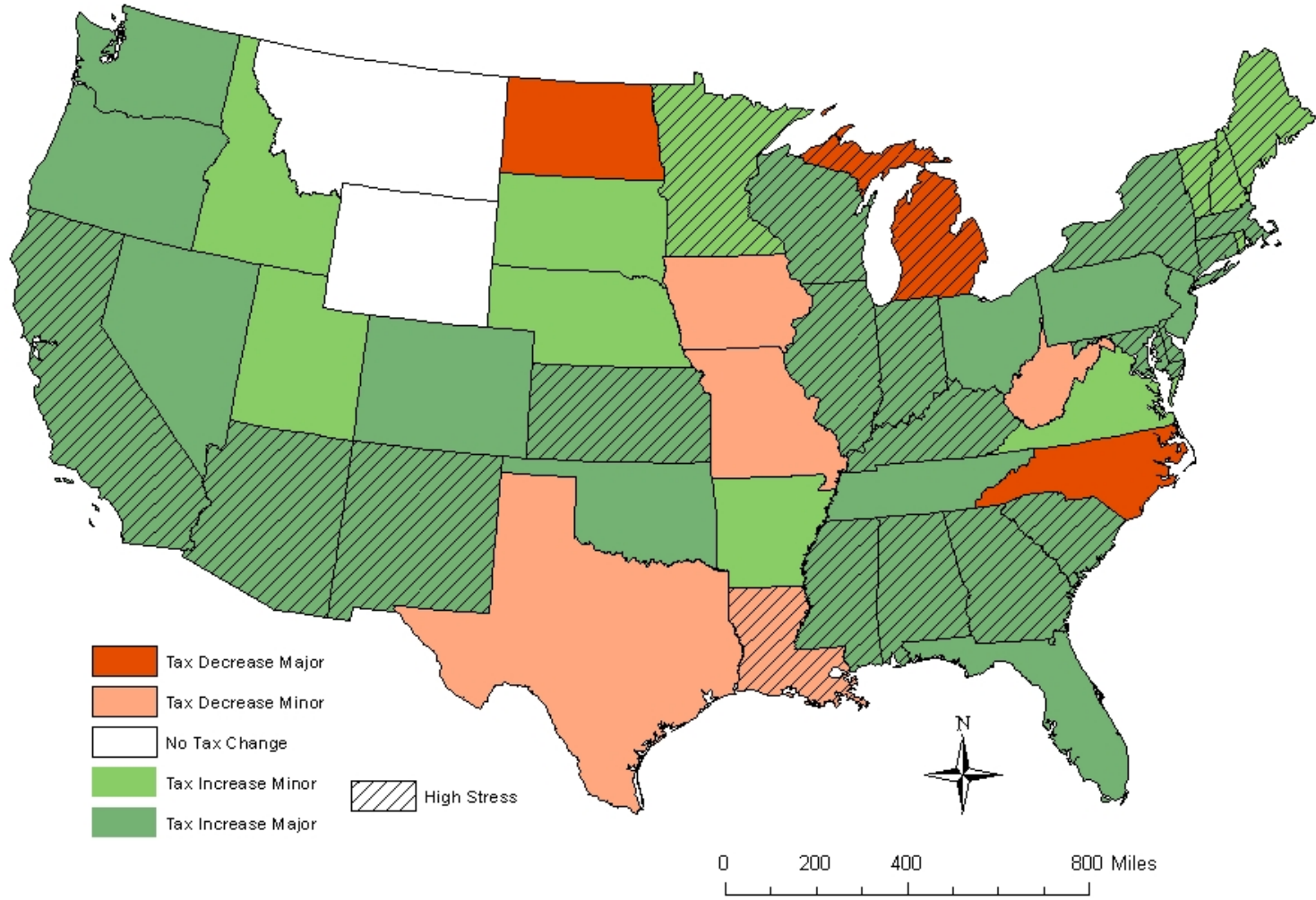
Major tax increase:

Greater than \$100 million net increase during FY09-FY11

High fiscal stress:

Deficits as a percentage of general revenue (higher than median)

Pre-Recession Fiscal Stress (FY07-08) and Subsequent State Tax Response (FY09-FY11)



Data Source: National Conference of State Legislatures

Projected Coordinate System: USA Contiguous Albers Equal Area Conic



Relative Level of Fiscal Stress			
	HIGH STRESS	LOW STRESS	
Reform Type	D1	D2	
	TAX DECREASE - MINOR	LA	IA, MO, TX, WV
	D3	D4	
	TAX DECREASE - MAJOR	MI	ND, NC
	D5	D6	
	TAX INCREASE – MINOR	MN, VT, ME, RI, NH	MT, SD, WY, NE, AR, AK, ID, VA, UT
	D7	D8	
	TAX INCREASE - MAJOR	NY, HI, NM, CA, KY, DE, AZ, SC, IN, GA, MA, WI, MD, KS, CT, IL, AL, MS	OK, FL, CO, WA, NJ, PA, TN, OH, OR, NV

Descriptive Statistics: Controls for key economic, fiscal, and political variables

Variable	Description	Mean	S.D.	Min	Max
<i>RECOVERY</i>	Recov. Ratio of Real PC OSR, FY07-FY13	93.23	12.34	75.33	164.12
<i>TAXACTION</i>	Tax Action, million \$, Avg. FY09-FY11	611.752	1445.42	-550	7380
<i>MAJORTAX</i>	Tax Action, >\$100 million, FY09-FY11	0.56	0.50	0.00	1.00
<i>STRESS</i>	Deficit to Gen Rev Ratio, Avg. FY07-FY08	-0.08	0.09	-0.36	0.08
<i>HIGHSTRESS</i>	Greater than median <i>STRESS</i>	0.50	0.50	0	1
<i>POP</i>	Population, 000s, Avg. of 2007 & 2012	6.14	6.83	0.56	37.16
Δ <i>GDP</i>	Per capita GDP Growth, 2007-2012	8.38	9.58	-9.63	61.50
<i>PCINCOME</i>	Per capita income, 2007	38532.86	5772.23	29316.00	56723.00
<i>UNEMP</i>	Unemployment rate, 2007	4.38	0.98	2.61	7.11
<i>TOTDEBT</i>	Total Debt, Avg. FY07-FY08	3546.99	2121.87	685.00	10877.50
<i>IDEOLOGY</i>	Citizen Ideology, 2007	59.32	14.42	27.23	87.76
<i>DEMGOV</i>	Democratic Governor, 2007	0.56	0.50	0.00	1.00

**Revenue recovery in response to tax actions is stronger in
the states with higher fiscal stress**

	(1)	(2)
<i>TAXACTION*HIGHSTRESS</i>	0.011*** (0.004)	-
<i>TAXACTION</i>	-0.010** (0.004)	-
<i>MAJORTAX*HIGHSTRESS</i>	-	12.155** (5.102)
<i>MAJORTAX</i>	-	-6.558* (3.635)
<i>HIGHSTRESS</i>	0.637 (2.705)	-2.437 (3.921)
Observations	50	50
R-squared	0.710	0.693

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: (1) Controls: Population, GDP growth, Per capita income, unemployment rate, total debt outstanding, citizen ideology, democratic government (2) Revenue Recovery is measured as the ratio of real per-capita own source revenues in 2013 to 2007

**States that passed a major tax increase in response to
higher stress levels had a relatively better recovery**

	(1)	(2)
D1, High Stress, Minor Decrease	-17.379** (7.090)	-17.903** (7.133)
D2, Low Stress, Minor Decrease	-0.272 (3.977)	0.477 (3.876)
D3, High stress, Major Decrease	-0.940 (7.738)	2.314 (7.667)
D4, Low Stress, Major Decrease	13.715** (6.242)	13.618** (6.050)
D5, High Stress, Minor Increase	-3.563 (3.594)	-3.131 (3.588)
D6, Low Stress, Minor Increase	-6.620** (3.071)	-8.444** (3.170)
D8, Low Stress, Major Increase	-10.291*** (2.832)	-9.132*** (2.826)
Political Controls	No	Yes
Observations	50	50
R-squared	0.770	0.796

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1



Key takeaways and Next Steps

- Revenue recovery after the Great Recession varied across the states depending on their levels of stress and policy response.
- Revenue recovery was stronger in states with higher levels of fiscal stress, implying obvious use of tax increases for stressed states.
- *Next steps:* Improving the measures of tax action. Comparing to NASBO estimates. Alternative stress measures.
- Other suggestions?



Contact Information

Sally Wallace

swallace@gsu.edu

Rahul Pathak

rpathak3@gsu.edu

Fiscal Research Center, Georgia State University

<http://frc.gsu.edu/>