Does the State Business Tax Climate Index Provide Useful Information for Policy Makers to Affect Economic Conditions in their States?¹

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<u>Abstract</u>: State tax policies vary greatly across the United States, impeding our ability to measure the impact of tax policy changes on economic indicators, including unemployment and gross domestic product. The State Business Tax Climate Index (SBTCI), published by the nonpartisan Tax Foundation since 2003, attempts to quantify the collective tax systems of each state in a manner that allows for meaningful comparison. Changes in a state's tax index over time should coincide with changes in the state's economic health, according to Tax Foundation claims. This paper assesses the SBTCI's predictive value, and finds little relationship between indexes and economic indicators.

Introduction:

State tax policies are complex and vary greatly across the United States. These variations have the potential to give some states economic advantages over others, with changes in rates and structures resulting in possible movements of employers and individuals. Due to their complexities, state tax codes are difficult to compare, impeding our ability to measure the impact of tax policy changes. There have been attempts to index the net effects of state tax policies, and the following analysis looks to one such index, the State Business Tax Climate Index (SBTCI), to assess its predictive value.

Table I: Predictor of 22 States' Economic Health					
By Region, the Probability an Index Predicted the Direction of the					
Indicator(s):					
State CDD Crowth	State GDP Growth and Unemployment				
State GDP Growth	Rate				
54.55%	22.73%				
Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Tax Foundation					

Our pre-

post evaluation isolated the states with the largest changes in their tax index from 2003-2004. To see if they have predictive value, we compared them to two key economic indicators, change in state GDP per capita and the unemployment rate. We found the changes in GDP and unemployment rate for each of those states, and then compared those changes to national averages and to states located within the same geographic region. The results suggest that a large change in a given tax index for the 2003-2004

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year will predict a change in state GDP from 2003-2006 higher than the regional average 54.55% of the time.³ The same results also predict that changes in unemployment rate and state GDP are higher for a state than the regional average 22.73% of the time.

A multiple regression produced no conclusive results on the benefits of improving SBTCI rankings. Instead, the regression models suggest that national and regional trends are statically far more significant than the tax index ratings in affecting state GDP and unemployment rates (see Appendix B, pp. 15-21).

Background: Do lower taxes translate into higher GDP growth and lower unemployment?

Taxes are a necessity for government operations, but their total burden, methods in which they are collected, and incidence vary greatly across nations, states, and localities. Taxes that are too high or place excessive burdens on one sector of an economy over others can create distortions in markets that lower citizens' average standard of living. Given the complexity and variation of taxes across states in the U.S., it is very difficult to accurately determine the effects of a state's tax structure on its competitive position in the economy.

The SBTCI attempts to quantify the collective tax systems of each state in a manner that allows for meaningful comparison, rating states on a number of variables they deem relevant to economic development since 2003. The index's publisher, the Tax Foundation, is a nonpartisan non-profit research group, which is a proponent of lower and more efficient taxes. The organization's leadership believes this tool is an effective indicator that deserves the attention of state policy makers, and can help inform their decisions on fiscal policy. The logic behind the SBTCI is simple: according to the SBTCI, "...the most competitive tax systems, and the ones that score best in the SBTCI, are those that create the fewest economic distortions by enforcing the most simple, progrowth tax systems characterized by broad bases and low rates."⁴ It follows that the lower the tax rate is for a given state, the easier it will be for that state to attract businesses, generate jobs and raise individual income.

An abundance of data is cited as evidence that the SBTCI is accurate in its assessment of a state's tax system, and that state scores have significant economic impacts. The Tax Foundation's president, Scott A. Hodge, cites data showing substantial improvements in the top 10 states in the index over the last five years in personal income, employment, and population.⁵ Hodge also cites job creation and global competition as crucial concerns in attempting to address key variables used to compute the SBTCI. In the index's annual report, there is an emphasis on the decision patterns of large corporate employers in relation to state tax policy. For instance, Arizona's favorable corporate tax code is cited as the key reason why Intel decided to build its multibillion dollar manufacturing plant there in 2005.⁶

³ States are divided into eight different regions by the Bureau of Economic Analysis.

⁴ Dubay & Atkins, 2006

⁵ Stanek, 2006

⁶ Dubay & Atkins, 2006

However, evidence suggesting that the SBTCI and other similar indexes are not effective in assessing the economic success of a state also exists. University of Iowa economist Peter Fisher notes that while several prominent indexes, including the SBTCI, claim to capture the most important variables to inform policy makers, they end up with very different rankings overall.⁷ In addition to overall inconsistency among indexes, Fisher notes that the SBTCI is a "large and complex undertaking, but ends up generating a number that has little relation to the actual taxes falling on new business investment in a state."⁸ Among other critiques of the SBTCI and other indexes, Fisher cites their ideological leanings and evidence that businesses pay little attention to them in decision making.

While we did not have access to Fisher's full analysis, an area of concern in judging the claims set forth in the SBTCI report is its emphasis on a simple correlation between high index score and relative economic success. It is possible that characteristics of each state that are unrelated to tax policy are responsible for current economic success. Instead of looking at correlations in rankings and outcomes, it is more useful to look at the effects of actual tax policy changes. Since the foundation fails to correlate change in its analysis, it is missing a vital component needed for true validity of its work. This paper utilizes this change approach to better answer questions of the SBTCI's utility.

Our hypothesis is that a state that improves its SBTCI ratings significantly will produce economic benefits when compared to states with ratings that remain relatively unchanged. Since economic growth is a primary reason that states choose to reduce taxes, this study should provide useful information as to the wisdom and appropriate scope of this policy choice.

Description of Tax Index, State GDP, Unemployment Rate and Methodology

The SBTCI rates a state's tax code using a number of variables they deem relevant in a combined overall index and in five separate categories: Corporate Tax Index, Individual Income Tax Index, Sales Tax Index, Unemployment Tax Index and Property Tax Index. For the purposes of this analysis, the Corporate Tax, Income Tax and Unemployment Tax Indexes were analyzed because they are more closely related to the policy issue at hand. Each state receives a score from 0 to 10 for each index, and each score is relative to the other 49 states' scores. For example, if a state receives a perfect 10, then the state's tax code is perceived by the Tax Foundation as having the best tax climate relative to the other 49 states. Data was copied into spreadsheets from a 2007 SBTCI report produced by the Tax Foundation (see Appendix A, p.7 for descriptive statistics).⁹

The GDP by state is an overall indicator of economic activity. The GDP for each state is defined by the Bureau of Economic Analysis as "the expenditures of households on goods and services plus business investment, government expenditures, and net

⁷ Fisher, 2005

⁸ Ibid.

⁹ Available online: <u>http://www.taxfoundation.org/files/bp52.pdf</u>.

exports."¹⁰ The Bureau of Labor Statistics surveys 60,000 households throughout the nation to determine the percent of the workforce (defined as 16 years of age or older) that is currently jobless but is seeking employment. Each indicator can be a proxy for the tax index: using the SBTCI's logic, a more tax friendly state will have a lower change in unemployment and a higher change in GDP per capita relative to a state that is less tax friendly. U.S. government data were also reported by region, with states grouped into one of eight categories, allowing for more localized comparisons. Data were copied into spreadsheets from government agency websites and subsequently analyzed (See Appendix A, pp.7-8 for descriptive statistics).

Changes in the SBTCI's measures of Corporate Tax, Individual Income Tax, and Unemployment Insurance Tax were analyzed to determine their correlation with changes in Gross Domestic Product (GDP) per capita and unemployment rates by state. These indexes were selected because their calculations are affected directly by policies that state governments can change, and may logically do so to attempt to improve economic conditions. Index data was limited to a small number of years from 2003-2006, so we looked at 2003 to 2004 changes in tax indexes and compared them to changes in economic performance indicator variables from 2003-2006. The longer period of time used for performance indicator variables attempts to account for a possible lag time in the realization of benefits. Analyses of 2003-2006 changes in index, in comparison to the same changes in economic indicators, was also conducted to allow for more changes in data points.

A multiple regression model that controlled for regional location was utilized in conducting analyses of changes for the years noted. Economic indicator variables, either percent change in GDP per capita or change in unemployment rate, were used as the dependent variable. The independent variables were change in SBTCI figures (with each index assessed in different regressions) and region (held constant in order to account for more localized economic effects). While these variables all seem reasonably valid in conducting these analyses, the scope and complexity of factors that could impact economic outcomes is unlikely to be accounted for to a large degree.

In addition to multiple regression analyses, a pre-post evaluation was also conducted. Utilizing the same variables as the multiple regression, states that demonstrated large positive or negative changes in SBTCI indexes were isolated, with economic indicators compared to the averages of states in their regions and nationwide (excluding the state of interest). Treatment effects were assessed to determine the size and direction of differences. We took the 22 states with the largest changes in their 2003-2004 index rating and compared those states' changes in GDP and unemployment to other states within the same geographical region. We also compared each of the 22 states' changes in GDP and unemployment trends to the other 49 states in the nation. The hypothesis is that large changes in a state's tax index should predict subsequent changes in the state's GDP per capita and employment rates, with all changes moving in the same direction as the index. For example, a large positive increase in the tax index should predict a larger state GDP and higher employment rate than the regional or national average.

¹⁰ Available online: <u>www.bea.gov</u>.

Data issues were minimal, with two notable exceptions. There were no missing observations or intuitively odd inputs, but the limited number of years of data available described above is problematic. Longer term analyses would likely be more meaningful and have greater power. The degrees to which state policy changes affected overall index rating are also relatively small, also creating power problems that limit results.

Results

Table II: Summary of Regression Results: Direction of Coefficient Relative to Hypothesis*					
51	nypotheses, - against)				
2003-2004 Index Changes to 2003-2006 State GDP per capita and Unemployment Rate :	2003-2006 Index Changes to 2003-2006 State GDP per capita and Unemployment Rate :				
All 6 -	3 +, 3 -				
Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Tax Foundation					

*Note that none of these coefficients are statistically significant results.

Multiple regression analyses produced no conclusive results on the benefits of improving SBTCI rankings. While all of the regressions involving unemployment rate proved statistically significant at p-values of 5%, and most of those using GDP were significant at 10%, none of the correlation coefficients between economic indicator changes and index changes produced statistically significant results.

As Table II suggests, a change in the tax index is matched by a corresponding change in state GDP or unemployment rate in only 25% of all regressions run. The direction of other coefficients is counterintuitive to our hypothesis. Positive changes in tax index are negatively correlated with financial indicators (note that positive changes in unemployment rate are an increase in joblessness, an adverse result) when 2003-2004 tax index changes were compared to 2003-2006 economic indicator changes. Results are mixed for coefficients using only the 2003-2006 frame for both variables, with 3 positive and 3 negative correlations. It is important to note again that none of these relationships is statistically significant, and fail to provide any support for the benefits of tax reduction. Table II summarizes findings. See attached STATA output at end of Appendices for full regression results.

Given the weak interaction between tax index and state GDP per capita and the unemployment rate, the regressions are still statistically significant. It suggests that the regional interaction terms are statically far more significant than tax index ratings in affecting economic indicator changes. R squared results ranged from .25 to .35, indicating that much of the variance in economic indicators is not explained by this model. See Appendix B, pages 15-21 for detailed regression results.

Table III: Using the 22 Largest Changes in the Tax Index to Predict the 22States' Subsequent Changes in GDP per Capita and Unemployment RateBy Region, the Probability an Index Correctly Predicted:						
State GDP Growth	Unemployment Rate Both					
54.55%	40.91%	22.73%				
By All Other States, the Proba	ability an Index Correctly Predicted:					
State GDP Growth	Unemployment Rate	Both				
40.91%	50.00%	36.36%				
Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Tax Foundation						

Finally, the pre-post analysis summarized by Table III produces results similar to regression analyses, in that there is no consistent relationship between changes in tax index and economic indicator outcomes. Large changes in a state's tax index for the 2003-2004 year will correctly predict a change in state GDP per capita from 2003-2006 only 55% of the time, when compared to others in its region. Changes in both unemployment rate and state GDP per capita move in the same direction as a tax index, when compared by region, only 23% of the time.

Conclusions and Implications:

The multiple regression and difference in difference analyses reveal a statistically insignificant link between the Tax Foundation's SBTCI and key economic indicators. While it may be intuitively true that lower taxes reduce deadweight losses and increase efficiency, the statistical analyses do not bear that out. Instead, a more complex picture emerges, where regional and national economic trends are far more powerful in predicting state GDP growth and unemployment rate trends.

In conclusion, while the SBTCI may provide some utility in ranking a state's relative tax climate to another, it is not instructive for policymakers. Indeed, policymakers should avoid the temptation to alter a state's tax code merely to improve its relative index score in the hopes that state GDP and employment will increase in turn. While there is no doubt a tax code may affect a state's GDP and unemployment rate, the interaction between those variables is not clearly captured by the SBTCI. Policymakers should therefore look beyond the SBTCI to regional and national trends and conduct more detailed analyses in order to attract economic growth and jobs.

Appendix A

Table 1: Descriptive statistics of the Tax Foundation's three tax indexes used for this analysis. Each index is based on a 0-10 scale. A zero is the "worst tax climate," defined by the Tax Foundation as an overly burdensome state tax code. A ten is the "best tax climate," defined by a tax-free system on the state's industries. The table is consistent with the Tax Foundation's assertion that most states average a five regardless of the index:

	Table 1: Index Score by Year and by Index										
	Corporate Tax Index			Individual Income Tax Index			Unemployment Insurance Tax Index				
Year	2003	2004	2006	2003	2004	2006	2003	2004	2006		
Mean	5.30	5.30	5.30	5.69	5.69	5.69	5.00	5.00	5.00		
Std. Dev.	1.38	1.38	1.38	2.03	2.05	2.07	0.99	0.97	0.98		
Min	3.18	3.19	3.00	2.61	2.45	2.57	2.33	2.34	2.26		
Median	5.09	5.11	5.04	5.09	5.09	5.10	5.09	5.13	5.16		
Maximum	10.00	10.00	10.00	10.00	10.00	10.00	6.62	6.53	6.74		
								Source: Ta	ax Foundation		

Table 2: Average unemployment by year. The data are from the Bureau of Labor Statistics. The unemployment rate for each state by year was collected, and the difference in unemployment rates was found simply by taking the difference of the selected years.

	Table 2: Average Unemployment Rate by Year									
Year	2006	2004	2003	2002	2003-2004 Change	2003-2006 Change				
Mean	4.45	5.21	5.61	5.37	-0.39	-1.16				
Std. Dev.	1.01	1.03	1.05	1.01	0.36	0.69				
Minimum	2.50	3.20	3.50	3.30	-1.20	-2.70				
Median	4.60	5.20	5.65	5.40	-0.40	-1.05				
Maximum	6.90	7.50	8.10	7.60	0.50	0.30				
					Source: B	sureau of Labor Statistics				

Table 3: The gross domestic product per capita by state data are from the Bureau of Economic Analysis. The state's output of goods and services are measured in dollar amounts and then standardized by the state's population. Data through 2006 are available.

Table 3: GDP per capita by State by Year									
	2003 2004 200								
Mean	\$33,836	\$34,810	\$36,323						
Std. Dev.	\$5,932	\$6,139	\$6,412						
Min	\$23,204	\$23,547	\$24,156						
Median	\$33,442	\$34,214	\$35,366						
Maximum	\$55,021	\$56,608	\$59,339						
		Source: Burea	Source: Bureau of Economic Analysis						

Table 4: Difference in difference analysis of the 22 states with the largest changes in tax index from 2003-2004. The following tables isolate the states with the largest changes in a tax index. We then compare the corresponding changes in the state's GDP and unemployment rate to the state's region and to all other states. The expectation is that a decrease in the tax index from 2003-2004 will have long term negative effects on the state's GDP and increase the unemployment rate. The data in these tables are pulled from the Tax Foundation.

Key (in order of appearance)	:
Alabama=State	TE = Treatment Effect
Southeast = Region	AL = Alabama

Table 4: Pre-F	Post Differenc	e in Differe	nces for State Change	es With Large	est Corporate Ta	ax Index
	Corporate 1 Chan		Percent Ch State (Unemployment Rate Change	
Years	2003- 2004	2003- 2006	2003-2004	2003- 2006	2003-2004	2003-2006
Alabama	-0.31		1 700/	9.85%	-0.30	-1.90
Southeast	0.00		4.79% 2.47%	6.59%	-0.30	-0.93
All Other States	0.00		2.47%	7.33%	-0.42	-0.93
TE (AL on region)	0.01		2.32%	3.26%	0.12	-0.97
TE (AL on nation)			1.94%	2.52%	0.12	-0.76
North Dakota	-0.47		-0.18%	9.59%	-0.10	-0.40
Plains	0.02		2.51%	6.69%	0.03	-0.83
Other States	0.01		2.94%	7.34%	-0.42	-1.17
TE (ND on region)			-2.69%	2.90%	-0.13	0.43
TE (ND on nation)			-3.13%	2.25%	0.32	0.77
Illinois		-0.63		4.53%		-2.10
Great Lakes		-0.16		3.01%		-0.58
All Other States		0.00		2.91%		-0.41
TE (IL on region)				1.52%		-1.53
TE (IL on nation)				1.62%		-1.69
New Hampshire		0.56		5.55%		-1.00

New England	0.02	7.94%	-0.72
All Other States	0.00	2.87%	-0.41
TE (NH on			
region)		-2.40%	-0.28
TE (NH on			
nation)		2.68%	-0.59

Table 5: Pre-Post E	Difference ir	n Differences	for States W Change	ith Largest Indi	vidual Income	Tax Index
		al Income x Change		ange in State SDP	Unemployment Rate Change	
Years	2003- 2004	2003-2006	2003- 2004	2003-2006	2003-2004	2003-2006
Arizona	-0.58		0.99%	7.11%	-0.80	-1.60
New Mexico	0.38		5.38%	12.12%	-0.20	-1.60
Southwest	-0.03		2.77%	7.94%	-0.65	-1.65
All Other States	0.00		2.87%	7.29%	-0.41	-1.14
TE (AZ on region)			-1.78%	-0.83%	-0.15	0.05
TE (AZ on nation)			-1.88%	-0.18%	-0.39	-0.46
TE (NM on region)			2.61%	4.17%	0.450	0.45
TE (NM on nation)			2.51%	4.83%	0.21	-0.46
New York	-0.74		3.85%	10.90%	-0.60	-1.80
Mideast	0.05		2.55%	6.86%	-0.45	-0.93
All Other States	0.00		2.88%	7.38%	-0.42	-1.16
TE (NY on region)			1.30%	4.04%	-0.15	-0.88
TE (NY on nation)			0.97%	3.52%	-0.18	-0.64
California		-0.74		10.80%		-1.90
Far West		0.00		9.13%		-1.76
All Other States		0.00		2.86%		-0.41
TE (CA on region)				1.67%		-0.14
TE (CA on nation)				7.94%		-1.49
Kentucky		-0.78		4.76%		-0.50
Southeast		0.11		7.35%		-1.19
All Other States		0.00		2.90%		-0.41
TE (KY on region)				-2.59%		0.69
TE (KY on nation)				1.86%		-0.09
Montana		1.87		9.70%		-1.00
Rocky Mountain		0.03		8.91%		-1.93
All Other States		0.00		2.87%		-0.42
TE (MT on region)				0.79%		0.93
TE (MT on nation)				6.82%		-0.58

New Mexico	1.06	12.12%	-1.60
Southwest	-0.11	7.67%	-1.63
All Other States	-0.01	2.83%	-0.42
TE (NM on region)		4.45%	
TE (NM on nation)		9.29%	

Table 6: Pre-Pos	st Difference in Dif	Ch	ange		ient Insurance T	ax Index
	Unemployment Index Cl		Percent Char GD	•	Unemployment Rate Change	
Years	2003-2004	2003-2006	2003-2004	2003-2006	2003-2004	2003- 2006
Arkansas	-0.83		3.59%	7.20%	-0.20	-0.50
Louisiana	-0.61		4.78%	12.87%	-0.70	-2.30
Southeast	-0.05		2.32%	6.17%	-0.43	-0.91
All Other States	0.01		2.85%	7.36%	-0.41	-1.13
TE (AK on region)			1.27%	1.04%	0.23	0.41
TE (AK on nation)			0.74%	-0.16%	0.21	0.63
TE (LA on region)			2.46%	6.70%	-0.27	-1.39
TE (LA on nation)			1.93%	5.50%	-0.29	-1.17
Massachusetts	-0.76		3.07%	7.14%	-0.60	-1.00
New England	0.19		4.00%	7.63%	-0.52	-0.72
All Other States	0.02		2.88%	7.39%	-0.41	-1.16
TE (MA on region	n)		-0.93%	-0.48%	-0.080	-0.08
TE (MA on nation	n)		0.20%	-0.24%	-0.188	-0.19
Nevada '03- '04	-1.21		4.97%	9.37%	-0.70	-1.00
Washington '03-'04	-0.93		0.73%	8.11%	-1.20	-2.50
Far West	-0.08		4.66%	9.74%	-0.60	-1.80
All Other States	0.05		2.88%	7.33%	-0.39	-1.13
TE (NV on region)			0.30%	-0.37%	-0.10	0.80
TE (NV on nation)			2.08%	2.05%	-0.31	0.13
TE (WA on region	n)		-3.94%	-1.63%	-0.600	-0.60
TE (WA on nation	n)		-2.16%	0.78%	-0.806	-0.81
Continued						

Continued	Unemployment Insurance Tax Index Change		Percent Change in State GDP		Unemployment Rate Change	
Years	2003-2004	2003-2006	2003-2004	2003-2006	2003- 2004	2003-2006
Pennsylvania	1.79		2.06%	4.63%	-0.30	-1.10
Mideast	0.14		3.00%	8.43%	-0.53	-1.10
All Other States	-0.04		2.90%	7.44%	-0.42	-1.16
TE (PA on region)			-0.94%	-3.81%	0.23	0.00
TE (PA on nation)			-0.84%	-2.81%	0.12	0.06
Massachusetts		-1.07		7.14%		-1.00
New England		-0.05		7.63%		-0.72
All Other States		0.02		7.39%		-1.16
TE (MA on region)				-0.48%		
TE (MA on nation)				-0.24%		
Nevada		-1.23		9.37%		-1.00
Washington		-0.93		8.11%		-2.50
Far West		-0.24		9.74%		-1.80
All Other States		-0.02		6.99%		-1.13
TE (NV on region)				-0.37%		0.80
TE (NV on nation)				2.38%		0.13
TE (WA on region)				-1.63%		
TE (WA on nation)				1.12%		
New York		1.17		10.90%		-1.80
Pennsylvania		1.67		4.63%		-1.10
Mideast		0.18		7.61%		-0.87
All Other States		-0.06		7.37%		-1.15

TE (NY on		
region)	3.29%	-0.93
TE (NY on nation)	3.53%	-0.65
TE (PA on region)	-2.98%	-0.23
TE (PA on nation)	-2.74%	0.05

Table 7: Tax Index as a predictor of the 22 states with the largest changes in a tax index from 2003-2004. The states with the largest changes in an SBTCI index were compared using a difference in difference analysis against other states within its geographical region and against every other state in the nation. The difference in difference calculations used the following variables: percent change in state GDP from 2003-2006, change in unemployment from 2003-2006:

Table 7: Predictor of 22 States' Economic Health					
By Region, the Probability an Index Correctly Predicted:					
State GDP Growth	Unemployment Rate Both				
54.55%	40.91%	22.73%			
By All Other States, the Probability an Index Correctly Predicted:					
State GDP Growth	Unemployment Rate	Both			
40.91%	50.00%	36.36%			
Source: Tax Foundation					

Table 8: The SBTCI should be a predictor of GDP and unemployment. For example, should a state change its tax code, the state's tax index rating may fall. The SBTCI should then predict a drop in state GDP and a rise in unemployment. The four states above had some of the largest drops in index score amongst the 50 states from 2003-2004. However, in no case was there a correlation between a drop in index score and a decline in state GDP from 2003-2006, nor or an increase in the state's unemployment rate from 2003-2006. All states were compared to other states within the same geographical location using a difference in difference technique.

	Table 8:SBTCI Correct Predictor of GDP and Unemployment Rate Trends?					
SBTCI Rank	State	Index Decrease from '03-'04?	State GDP Decrease from 2003-2006?	Unemployment Rate (UR) Up?	Index Correct Predictor of GDP and UR Trends?	
47	New York	Yes	No	No	No	
46	Massachusetts	Yes	No	No	No	
22	Washington	Yes	No	No	No	
18	Nevada	Yes	No	No	No	
Source: Tax Foundation and Difference in Difference Analysis						

Table 9: Sample Crosswalk					
State_Code	State	State	Region_Code	Region	
7	Connecticut	CT	1	New England	
31	New Jersey	NJ	2	Mideast	
22	Michigan	MI	3	Great Lakes	
	North				
28	Dakota	ND	4	Plains	
2	Arkansas	AK	5	Southeast	
32	New Mexico	NM	6	Southwest	
	Idaho			Rocky	
13		ID	7	Mountain	
1	Alaska	AL	8	Far West	

Table 9: Sample Crosswalk for regional variables used in STATA regression: