

Original Article

Does State Income Tax Matter in the United States? A Cross-Sectional Analysis of 50 States and the District of Columbia

¹A. Désiré Adom

¹Department of Economics, Eastern Illinois University, Charleston, IL, United States of America.

Received Date: 27 April 2024

Revised Date: 15 May 2024

Accepted Date: 18 May 2024

Published Date: 31 May 2024

Abstract: Taxation-related themes never cease to draw interest from economists, decision-makers and other stakeholders involved in and with public policy, public administration, and academia. This paper considers a cross-section of 50 states — including nine or so states with no income tax — and the District of Columbia to investigate whether state income tax matters. Using an heteroskedasticity-consistent estimation method, it is found that not only it does, but it penalizes income growth on a per capita basis by about 9.2 percent. This outcome provides further empirical legitimacy to anti-state income tax proponents. On the other hand, the absence of state income tax does not preclude sound public finance choices or outcomes featuring budget surpluses. Acknowledging that the debate pertaining to changes in taxation legislation can easily slip into the realm of normative economics, the notion of statewide income tax elimination need not be an economic taboo any longer. It should at least be considered for its potential benefits under the prism of a proactive and balancing mechanism — including, for instance, an agreed-upon range for a statewide Gini-inspired index — to maintain and promote at the same time social equity and a fair distribution of growth dividends.

Keywords: Income tax, State, Cross-section.

JEL Classification: C21, H24.

I. INTRODUCTION

Taxation matters remain front and center in any nation, whether developing, emerging or developed. Case in point, they determine within any nation the pattern of income distribution as well as the standard of living. They impact every aspect of economic activities, and hence society altogether, by providing the necessary financial resources to develop, build, and sustain both hard and soft infrastructures. This fact encapsulates the general context highlighting the significance and far-reaching scope of the work being undertaken for three major stakeholders, namely, governments, businesses, and households. For state governments in the United States in particular, which are the focus herein, the expected value of this paper is two-fold.

First, it enters the broad debate pertaining to the efficiency of tax arrangements across states and their impacts on regional or local economic development and standards of living. The outcome of this work can inform state governments' decisions about taxation choices in their respective jurisdictions. Second, it contributes to assessing how tax arrangements in different states (i) govern decisions of businesses as far as investment and job creation are concerned, and (ii) steer decisions of households regarding where to live, work, and retire. All these factors underscore the importance of this topic and its contributions to understanding the ramifications of taxation arrangements across states.

As of FY 2023, there were nine states or so in the United States — namely, Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming — that did not levy state income tax.¹ In theory, the absence of income tax typically entails that state residents' disposable income trends higher. On the other hand, this absence constitutes one fewer essential source of revenue for state governments as they chart yearly budgets to fund the vast and diverse pools of programs in their respective states. It, therefore, becomes pertinent to explore the incidence of state income tax on standards of living across states and, as a corollary, on regional or local economic development.

The empirical analysis is articulated around five sections. The next section lays out the literature review, whereas section 3 discusses the methodology. In the fourth section, data, results, and policy implications are presented. The fifth section wraps up the study with a conclusion.

¹ In Washington, there exists one exception for certain categories of high earners who pay state income tax on investment income and capital gain. As far as New Hampshire is concerned, although there is no income tax on earned wages, some forms of state income tax are currently levied on investment/interest income. However, these taxes have been repealed and will be phased out completely from 2023 to 2027. Overall, there is no individual state income tax of any kind levied in seven states.



II. LITERATURE REVIEW

From classical to more contemporary teachings and case studies in economics, taxation has been known to play a central role in influencing economic growth. For instance, an analysis by Gale and Samwick (2014) could not find otherwise when looking at the effects of tax changes on economic growth from the short to long run. They highlighted that a change in tax, through a tax cut, might generate budget deficits, which would negatively impact labor supply, saving and investment, and, consequently, leading to slow economic growth.

Further efforts to understand the repercussions of state individual income tax on local economic activities have been noted and available for decades in the literature. To name a few, Dye and Feiock (1995) reflected specifically on the effect of this type of tax on growth in personal income at the state level through a pooled cross-sectional time series analysis of US states from 1950 to 1989. After accounting for national economic conditions, they empirically established that the levy of state individual income tax significantly and negatively impacted per capita income growth. Poulson and Kaplan (2008) came up with parallel findings, using an endogenous growth model, where they discovered a negative and significant effect of higher marginal tax rates on economic growth across states.

More recently, Moretti and Wilson (2017) explored the effects of state taxes on the geographical location of top earners. Results showed that there were "large" and "stable" impacts of personal and corporate taxes on migration patterns of innovative individuals and businesses. They detected that the long run elasticity of mobility with respect to personal income taxes was 1.8. In addition, Mamo (2023) expressed interest in investigating the role of direct and indirect taxes. He assessed the impacts of different tax structures on state per capita income growth. Some notable findings indicated that indirect taxes, like property taxes, had a depressing effect on income growth, whereas corporate, individual, and sales taxes featured no such significant impacts.

III. METHODOLOGY

This work uses a cross-sectional estimation technique. Equation (1) describes the baseline regression process:

$$Q = X\beta + \varepsilon \quad (1)$$

Where Q , X , β , and ε are $(T \times 1)$, $(T \times p)$, $(p \times 1)$, and $(T \times 1)$ matrices, respectively. T is the number of observations, and p is the number of coefficients.

A problem of heteroskedasticity is likely, and to be expected in cross-sectional analyses. When it is detected, the consistency of Ordinary Least Squares (OLS) estimates holds, but standard errors are invalid, which could severely distort the significance of said estimates. To enhance the robustness of findings, White (1980) derives heteroskedasticity-consistent standard errors in accordance with the following covariance matrix estimator:

$$\hat{V} = (X'X)^{-1} \left(\frac{T}{T-p} \sum_{t=1}^T \hat{\varepsilon}_t^2 X_t X_t' \right) (X'X)^{-1} \quad (2)$$

Alternatively, in the presence of heteroskedasticity, Equation (1) can be recalibrated to improve the efficiency of estimates using Weighted Least Squares (WLS) estimation techniques. In this analysis, $T = 1, \dots, 51$, and $p = 4$.

IV. DATA, RESULTS, AND POLICY IMPLICATIONS

A) Data

The dataset includes four series, namely, the Gross State Product Per Capita (GSPPC),² State Tax Collection Per Capita (STCPC), Total Personal Consumption Expenditure Per Capita (TPCEPC),³ and the State Income Tax Dummy (SITD). Except for the latter, they are all sourced from the Kaiser Family Foundation (KFF) database.

B) Results

Table 1 provides some useful statistics with respect to the variables in the study.⁴ Some notable differences are perceptible between states in light of relatively large standard deviations. This should not come as unexpected when dealing with cross-sectional data of a large geographical area as the United States.

² It's noteworthy that economic development and standard of living across states are captured by GSPPC.

³ This variable is critical in the analysis. Indeed, personal consumption in the US constitutes in general the largest component, anywhere between 60 and 70 percent, of all economic activities, according to the Bureau of Economic Analysis (BEA).

⁴ The dummy is not included in the table due to its straightforwardness, taking on just two values, 0 and 1, throughout the cross section.

Table 1: Summary Statistics

	GSPPC	STCPC	TPCEPC
Mean	77111.55408	4489.3922	53230.29
Median	71813.7854	4070	51775.45
Maximum	254171.6254	15196	90189.48
Minimum	49043.79794	2507	41236.52
Std. Dev.	28469.46365	1968.8996	7942.914
Observations	51	51	51

As a starting point for empirical discussions, OLS estimates are reported in Table 2. They indicate that states with income tax sustain a growth handicap in gross state product on a per capita basis, and this outcome is statistically significant. Specifically, states that levy income tax experience a growth rate that is approximately 9.2 percent lower than states without income tax levies.⁵ However, these findings may exhibit spuriousness due to heteroskedasticity. Four distinct tests are accordingly performed to remove any empirical ambiguity. One notes, through tables 3, 4, 5, and 6, that three tests (Breusch-Pagan-Godfrey, Glejser, and White) confirm the presence of heteroskedasticity, while the fourth one (Harvey) rather stipulates homoskedasticity.⁶ Out of an abundance of caution, the baseline model is rerun to obtain efficient estimates using heteroskedasticity-consistent (HC) estimators. Table 7 shows an HC SITD estimate with increased efficiency as both the standard error and level of significance improve. In other words, state income tax levies are and remain pivotal in determining the standard of living, and they curtail its growth.

Table 2: Preliminary OLS estimates⁷

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SITD	-0.096667*	0.05919	-1.633164	0.1091
LOG(STPC)	0.259426***	0.0891	2.91164	0.0055
LOG(TPCEPC)	1.087909***	0.201247	5.405836	0
C	-2.699298	1.728147	-1.56196	0.125
R-squared	0.746946	Durbin-Watson stat		2.337575
Adjusted R-squared	0.730794			
F-statistic	46.24375			
Prob(F-statistic)	0			

Table 3: Breusch-Pagan-Godfrey test

F-statistic	4.988006	Prob. F(3,47)	0.0044
Obs*R-squared	12.31626	Prob. Chi-Square(3)	0.0064
Scaled explained SS	14.23752	Prob. Chi-Square(3)	0.0026

Table 4: Glejser test

F-statistic	2.457684	Prob. F(3,47)	0.0745
Obs*R-squared	6.915662	Prob. Chi-Square(3)	0.0746
Scaled explained SS	7.466582	Prob. Chi-Square(3)	0.0584

Table 5: White test

F-statistic	3.547777	Prob. F(8,42)	0.0032
Obs*R-squared	20.56618	Prob. Chi-Square(8)	0.0084
Scaled explained SS	23.77437	Prob. Chi-Square(8)	0.0025

Table 6: Harvey test

F-statistic	0.59524	Prob. F(3,47)	0.6213
Obs*R-squared	1.86677	Prob. Chi-Square(3)	0.6005
Scaled explained SS	1.310633	Prob. Chi-Square(3)	0.7266

⁵ See Halvorsen and Palmquist (1980) and Kennedy (1981) for the correct interpretation of dummies in semilogarithmic equations.

⁶ For all tests, H_0 : Homoskedasticity.

⁷ *, **, and *** denote significance level at 10, 5, and 1 percent, respectively.

Table 7: HC estimates⁸

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SITD	-0.096667**	0.044686	-2.163261	0.0356
LOG(STPC)	0.259426***	0.104587	2.480484	0.0168
LOG(TPCEPC)	1.087909***	0.206348	5.272197	0
C	-2.699298	2.380618	-1.133864	0.2626
R-squared	0.746946	Durbin-Watson stat		2.337575
Adjusted R-squared	0.730794	Wald F-statistic		14.19819
F-statistic	46.24375	Prob(Wald F-statistic)		0.000001
Prob(F-statistic)	0			

C) Policy Implications

Empirical findings in this study prop up the narrative of anti-state income tax proponents. They contend that an economic environment with no or low state-income tax provides increased incentives that foster economic activities through consumption and investment and, thus, the creation of riches. This stance is also buttressed by other studies in the literature, such as Dye and Feiock (1995) and Poulson and Kaplan (2008), among others.

The implications of this investigation are not without consequences. A legitimate question from the vintage point of state residents could be framed as follows: How to cope with outlays or make up for lingering budget deficits if states were to suppress income tax? For instance, in FY 2023, Illinois and Indiana applied flat income tax rates of 4.95% and 3.15%, respectively. In California and Georgia, state income tax brackets were 1-12.3% and 1-5.75%, respectively. Illinois and California incurred deficits, whereas Indiana and Georgia had surpluses. Needless to repeat, this stream of revenue will dry up if and when state income tax is effectively repealed.

On the other hand, states like Texas and Florida, among others, with zero state income tax, enjoyed surpluses in the same fiscal year. This snapshot of six states and their budget balances is by no means an indication of evidence for a direct nexus between the presence (or not) of state income tax and the budget deficit (or surplus), or vice versa. If anything, it portends that the absence of state income tax does not necessarily lead to a deficit or degradation of public finances. This perspective imparts some elements of response to the aforesaid concern.

Another approach to finding answers rests on looking at a pertinent statistic, which is total personal consumption expenditure per capita in both states with state income tax and states without. In 2022, averages were about \$52,877 for the former and \$54,880 for the latter. Considering that consumption remains the prime driving force of state economies, higher consumption would typically generate higher growth or increased economic activities, which would generate higher state revenues. This would, in turn, partially or fully offset, or exceed, the shortfall in revenue induced by the statewide elimination of income tax.

One cannot overlook the fact that debates about changes in tax legislation can easily slip into the realm of normative economics. However, from a purely economic angle, this paper argues that a state pursuing pro-growth policies, including an elimination of income tax, could still experience growth and have sound public finances through increased growth and revenue. A key issue related to social equity endures as it pertains to the distribution of growth dividends to ensure that it is fairly executed. A solution to achieving this outcome could be the exploration by decision-makers and stakeholders of an agreed-upon range for a statewide Gini-inspired index, which would constitute a simplified form of socio-economic compass to guide the distribution process. Calibrations of funding for social programs would be made according to movements of this compass in and out of this range.

V. CONCLUSION

This inquiry has endeavored to figure out whether state income tax matters in the United States. Evidence is found that it does using 50 states and the District of Columbia (DC). In particular, state income tax, as applied in 41 states and DC, penalizes income growth on a per capita basis and, ultimately, the standard of living.

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