Peer-Review

Lin, Jonathan. 2025. "The Impact of State Fiscal Structure and Income Inequality on Inter-Generational Economic Mobility." *Journal of High School Science* 9 (3): 577–94. https://doi.org/10.64336/001c.144765.

Please address the comments below, and discuss each in the manuscript.

1.Why 2012 to 2022 ?

2.I will need to see regression coefficients to evaluate how much variation in the data is explained by the explanatory variable(s). If your R2 is low, then you will need to re-evaluate your premise. Please present this for all explanatory variables for all models. In addition, present the actual graphs with data points (I am assuming 11 data points) as well for all models.

3.The premise you have adopted is that the tax-structure or income inequality affects the intergenerational mobility of the bottom 20%. However, intuitively, intergenertional mobility should be more among the middle class, than among the bottom 20%. Please provide references (and data) that show that intergenerational mobility among the bottom 20% income earners is equal to or greater than the middle 80% of income earners (even if tax structures are favorable and income inequality is lesser). If not, then Gini or Regressive tax structures should make a smaller difference to mobility than that presented in the manuscript.

4.You state "……The inclusion of the Gini coefficient also improves overall model fit and enhances the ability to explain variation in intergenerational mobility across states….." provide R2 data (see point 2)

5.Include a live link for all references.

6.A larger chunk of income is allocated to federal tax than state and local taxes. Explain why you chose state and local to derive these relationships. Discuss in the manuscript.

Dear Reviewers,

Thank you for considering my research paper and the opportunity to revise and resubmit our manuscript, The Impact of State Fiscal Structure and Income Inequality on Intergenerational Economic Mobility. I am sincerely grateful for your careful review and constructive comments. Your feedback has enabled me to strengthen the manuscript by clarifying data choices and methodology, by refining the empirical presentation and recognizing an important limitation for future enhancement. I have carefully addressed all comments in the attached response document. Major revisions include: clarifications on selections of data and methodology, limitation and important future enhancements of the study and live links to all references. All revisions are highlighted in the manuscript for ease of reference.

Below, I provide detailed responses to each point along with the corresponding revisions made to the manuscript.

1. ***Why 2012 to 2022?***

This timeframe was selected since it covers four distinct macroeconomic periods that are directly relevant to intergenerational mobility: Post-Recession Recovery (2012–2014), marked by fiscal stimulus and lagged mobility gains; Stable Growth (2015–2017), with steady expansion and fading stimulus effects; Pre-COVID-19 Expansion (2018–2019), a period of high GDP growth but rising inequality and affordability concerns; and COVID-19 & Early Recovery (2020–2022), reflecting pandemic-induced shocks and emergency fiscal responses. These phases provide meaningful variation in both state-level fiscal policy and economic conditions and allow us to examine the role of different economic conditions in shaping our results. Evidence from the OECD's U.S. Economic Survey (2024)

supports the distinction between the pre-pandemic expansion and the unique pandemic shock and recovery (OECD 2024), while the NBER's business-cycle dating formally identifies the sharp 2020 recession as a separate phase (NBER Business Cycle Dating Contest).

2. ***I will need to see regression coefficients to evaluate how much variation in the data is explained by the explanatory variable(s). If your R2 is low, then you will need to re-evaluate your premise. Please present this for all explanatory variables for all models. In addition, present the actual graphs with data points (I am assuming 11 data points) as well for all models***

Regression coefficients for all explanatory variables are already presented in the manuscript. I have modified the label to be" Coefficient Estimate" for clarification. Please see Table 1 and 2 for details.

To address your concern about explanatory power, please find below revised results tables including R^2.

As you can see, R^2 has the range of 0.2 - 0.29 for the mobility model in Table 1 below, which is in line with the empirical literature on intergenerational mobility, where variation across states, counties, or cohorts is shaped by a wide set of historical, institutional, and demographic forces. R^2 for the homeownership model is even lower and falls in the range of 0.12-0.2 in Table 2 below. In social science modeling, R^2 values as low as 0.10 can be acceptable when key predictors are statistically significant (Osili, 2022). Methodological guides further suggest that explaining around 20% of outcome variation in social sciences studies is often considered excellent (Valchanov, 2023). Even in large-scale studies with rich covariates, R^2 values commonly fall in the 0.2–0.4 range, for example, Chetty et al. (2014, Quarterly Journal of Economics)

Table 1: Mobility Regression Results

Table	Term	Coefficient Estimate	Standard error	Statistic	P-value
a (τ)	Intercept	0.22178	0.02706	8.19519	0.00000
	τ-ITEP	-0.00129	0.00057	-2.25272	0.02471
	GDP Per Capita	0.00000	0.00000	.073237	0.46429
	State College Ratio	0.30752	0.05392	4.70305	0.00000
	R Square 0.2				
b (τ + Gini)	Intercept	0.39646	0.04111	9.64404	0.00000
	τ-ITEP	-0.00118	0.00056	-2.12108	0.03441
	IPUMSgini	0.32349	0.05852	-4.52762	0.00000
	GDP Per Capita	0.00000	0.00000	2.35058	0.01913
	State College Ratio	0.22858	0.05430	4.20956	0.00003
	R Square 0.23				
c (τ + Gini +time-based)	Intercept	0.36582	0.03978	9.19500	0.00000
	τ-ITEP	-0.00123	0.00054	-2.28747	0.02259
	IPUMSgini	0.30437	0.05622	-4.41356	0.00000
	GDP Per Capita	0.00000	0.00000	-3.09544	0.00208
	State College Ratio	0.13877	0.05455	2.54376	0.01127

	Year Group (2012-2014)	0.03557	0.00538	6.61070	0.00000
	Year Group (2015-2017)	0.01675	0.00501	3.34231	0.00089
	Year Group (2018-2019)	0.02701	0.00505	4.35037	0.00000
	R Square 0.29				

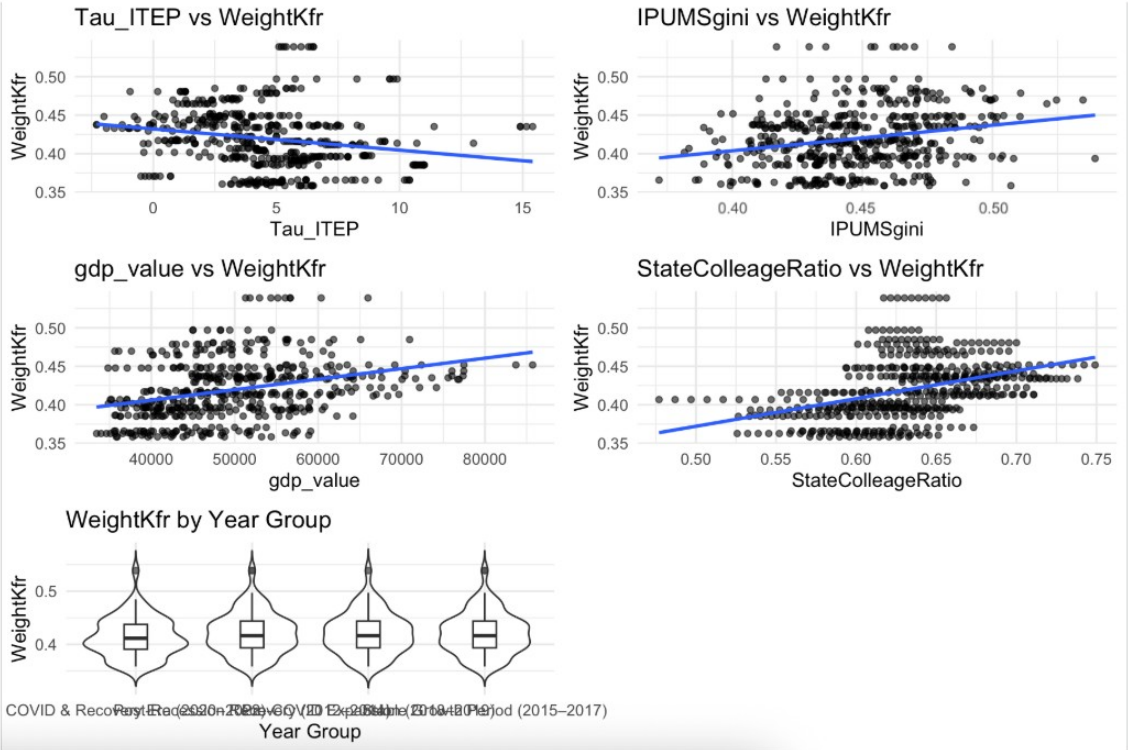
Table 2: Homeownership Regression Results

Table	Term	Coefficient Estimate	Standard Error	Statistic	P-value
a (τ)	Intercept	0.01174	0.00052	22.48339	0.00000
	τ-ITEP	0.00001	0.00001	0.81227	0.41702
	GDP Per Capita	-0.00000003	0.00000	-4.41509	0.00001
	State College Ratio	-0.00102	0.00104	-0.98402	0.32558
	R Square 0.12				
b (τ + Gini)	Intercept	0.01423	0.00080	17.69213	0.00000
	τ-ITEP	0.00001	0.00001	0.96683	0.33410
	IPUMSgini	-0.004608	0.00115	-4.02501	0.00007
	GDP Per Capita	0.00000	0.00000	-3.09544	0.00208
	State College Ratio	-0.00215	0.00106	-2.02227	0.04368
	R Square 0.2				

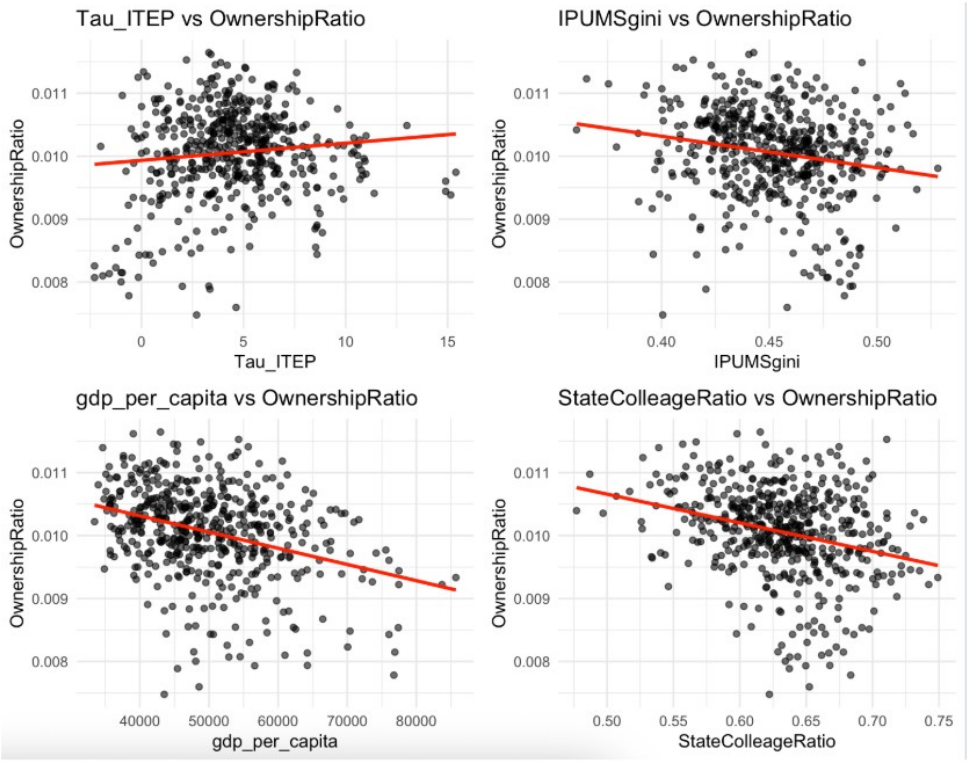
Regarding your question on the actual graph and data points, I would like to clarify that my dataset is a state × year panel covering 50 states from 2012 to 2022, which produces several hundred observations. I interpret your request as a call to supplement the regression tables with scatterplots showing the relationship between the key explanatory variables (such as τ-ITEP) and the outcome (such as mobility) with fitted regression lines. I include these figures to provide a clear visual representation of the underlying data and model fit.

Please find below the scatterplot for Mobility Model (Table 1c) and Homeownership Model (Table 2b). These examples are presented because they are representative of the broader set of results within each model family (similar coefficients, R^2).

Scatterplot for Mobility Model



Scatterplot for Homeownership Model



Thank you for the suggestion. I have added the R^2 values to both Table 1 and Table 2, along with reference information to aid interpretation. In addition, the scatterplots have been included in the appendix.

3. ***The premise you have adopted is that the tax-structure or income inequality affects the intergenerational mobility of the bottom 20%. However, intuitively, intergenerational mobility should be more among the middle class, than among the bottom 20%. Please provide references (and data) that show that intergenerational mobility among the bottom 20% income earners is equal to or greater than the middle 80% of income earners (even if tax structures are favorable and income inequality is lesser). If not, then Gini or Regressive tax structures should make a smaller difference to mobility than that presented in the manuscript.***

Thank you for the great question and this insightful comment. I fully agree that intergenerational mobility dynamics differ across the income distribution and understanding mobility dynamics across the income distribution, including the middle class, would enrich the analysis. However, this study follows the prior work (Chetty et al., 2014 & 2018; Corak, 2013; Manduca, 2018) and deliberately chooses the measure: the mean child income rank for those whose parents were at the 25th percentile (p25), as the benchmark to evaluate "upward mobility from disadvantaged households," , since it is considered most informative for evaluating equality of opportunity and the role of redistributive institutions. The purpose of this measure is not to claim that the bottom 20% (or 25%) have more mobility than the middle class, but rather to assess whether children from disadvantaged households have a genuine chance to climb the income ladder. This has become the commonly used benchmark in the literature because it provides a consistent and policy-relevant indicator of upward mobility, which serves the purpose of the study to understand whether children from low-income households are able to rise in the national income distribution. At present, parallel measures at other parental income percentiles are not included in the public release, and the underlying linked IRS, Census microdata required to construct them are not publicly accessible. While I am therefore unable to directly compare mobility at p25 to that of the middle class with current public data, I acknowledge this as a limitation of the study and highlight it as an important direction for future research when broader data access becomes available.

In response to your feedback, I have added clarification of this methodological choice and its limitations in Abstract, Sections 3.1, and 6 the manuscript

4. ***You state "……The inclusion of the Gini coefficient also improves overall model fit and enhances the ability to explain variation in intergenerational mobility across states…" provide R2 data (see point 2)***

Please see Table2 in responses to #2 above, which indicates R^2 increase from 0.12 to 0.2 with inclusion of Gini coefficient.

5. ***Include a live link for all references.***

Live links are added in the manuscript. Thank you for the reminder.

6. ***A larger chunk of income is allocated to federal tax than state and local taxes. Explain why you chose state and local to derive these relationships. Discuss in the manuscript.***

You raised the important point that I should provide a better explanation in the manuscript why the analysis focuses on state and local systems since federal taxes are larger than state and local taxes. While federal taxation dominates in absolute magnitude, it is highly uniform across states, providing little cross-sectional variation for empirical analysis. In contrast, state and local governments structure their tax systems very differently, balancing income, sales, and property taxes in ways that generate significant differences in progressivity and regressivity across states. These differences directly shape household disposable income and determine the extent of public investment in education, housing, and other opportunity-enhancing goods. As a result, state and local variation provides the most relevant setting for identifying how fiscal structure influences intergenerational mobility and homeownership.

To address this point, the Abstract and Introduction have been revised to clarify more explicitly the rationale for focusing on state and local taxes, while also acknowledging the important role of federal taxation in shaping household budgets.

Thank you for addressing my comments. Accepted.