Rising Income Inequality Increasing Political Polarization?
A State-Level Analysis over Two Decades

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While the nascent literature has begun to explore the causal link between a simultaneous trend of rising income inequality and political polarization in the United States, it focuses almost exclusively on a federal level analysis. How this relationship operates on a state level remains to be explored. The scope of this research, then, is to examine how statewide income inequality levels influence the political polarization in state legislatures. Using panel data over two decades, fixed effects and random effects models overall reveal that on the state level, the causal link between the two variables is ultimately not quite supported.

INTRODUCTION

Income inequality and political polarization are both on the rise in the United States, as tracked by a range of inequality studies (Atkinson, Piketty, and Saez, 2011) and documented by Poole and Rosenthal's (1997, 2007) index of polarization in the United States Congress and the partisan thermometer ratings from the American National Election Studies (Prior, 2007). The coincidence of these trends following a similar path, along with the importance of both concepts, has led some researchers to hypothesize that increased inequality and political polarization are linked. The rise in inequality and polarization has significant implications on political-economic and public policy issues. Increased political polarization has led to increased legislative stagnation, decreased compromise, and more serious gridlock. As discussions of the serious potential repercussions of polarization dominate political and media circles today, the potential causal link with income inequality makes exploring this question both timely and important. After a review of the literature and consideration of the current research endeavors, this paper outlines the sources of data and sets up the empirical framework. Following a panel-data regression analysis that includes both fixed and random effects models, the results are presented, analyzed, and discussed. Ultimately, the paper concludes with a discussion of the implications of the findings.

REVIEW OF THE LITERATURE

Since the recognition of the trend is a more modern development, the number of studies investigating this empirical link between income inequality and political polarization in economics is not yet very large and extensive. While income inequality is a major issue and topic of discussion in the discipline, the effect on political polarization is less studied and explored. McCarty et al. (2003) have explored the relationship between income inequality and partisan polarization by using National Election Study (NES) data from 1952 to 2000. The NES data is used to construct the measurement of political partisanship on a seven-point scale that ranges from strong republican to strong democrat. Using these variables, an ordered

probit regression shows that partisanship becomes more stratified as income rises. The study additionally, yet not quite as extensively, evaluates the connection between income inequality, measured by the Gini coefficient, and the House polarization index, measured by the average gap between scores given to Democratic and Republican members of Congress on certain partisan ranked issues. Based on the measures used, the study ultimately discovers a direct positive relationship between growing income inequality and polarization. The McCarty et al (2003) study is useful for situating the context and objective of this paper's research problem. Additionally, it gives reason to support the hypothesis, but still provides many areas for further testing and exploration, such as using different methods, controlling for more variables, and employing a more targeted approach.

Duca and Saving (2014) go beyond McCarty et al.'s initial exploration with one of the most comprehensive studies to date. Duca and Saving (2014) examine the relationship between income inequality and political polarization on the national scale using a time series analysis over nine decades of federal income data. Two different measures of income inequality are tested—the inverted Pareto-Lorenz coefficient and a measure of the income share of the top one percent of earners. These measures of inequality are modeled against Poole and Rosenthal's (1997, 2007) measure of political polarization in both the U.S. House and Senate—which is based on a -1 to 1 partisan scale. Within their model, they tested for several control variables (including off-year elections, presidential impeachments) and found that the effect of a president's second term election was the only other significant political variable on polarization. Their time series model ultimately leads to differing results based on the chosen measure of income inequality. Using the inverse Pareto-Lorenz coefficient, which they argue is the more accurate measure of income inequality, led to a stronger relationship between the two variables of interest; whereas the income share of the top one percent was less significant. Their results also suggest potential bi-directional effects between the two variables. This study is especially useful not only due to its analysis over an extensive time frame—90 years—but also because testing the different measures of income inequality yielded significantly different results. This suggests that more studies need to be undertaken using additional measures of the variables. It also reaffirms that there is not one clear, prevailing answer to the research question currently in the literature. Additionally, Duca and Saving (2014) control for other political variables in their regression, as opposed to economic variables similar to other previous studies, which reveals the need to consider controlling for variables that influence both the political and economic landscape.

A more recent study by Kwon (2015) evaluates the research question of interest from the opposite perspective, asking instead if political polarization influences income inequality, with income inequality as the dependent variable. Kwon (2015) is one of the first of its kind to examine the causal relationship in the opposite way of prevailing literature. The study constructs a time series national-level data set with data from the years 1913 to 2008. Their results indicate that polarization as an independent variable was a better predictor of income inequality in the past. They also find that polarization in the House, as opposed to the Senate, produces a more consistent and robust connection with income share. This is an especially interesting conclusion if one considers the different dynamics between the House and the Senate, with the House being larger, more diverse, and local-based compared to the smaller, statewide-elected Senate. This suggests that looking at this question through a more targeted lens based on geography and area would yield worthy results. This study also uses breakdowns of income share to measure income inequality, which was previously determined by the Duca and Saving (2014) study to be a less accurate measure of inequality, which allows for further improvement and discussion on their question and methods.

Marr (2014) also takes on a similar opposite approach as Kwon (2015) and relates to the research question in a more unique way by looking at and comparing three factors that may affect income inequality: redistribution preferences, intergenerational mobility, and political polarization. The connection between income inequality and political polarization focuses mainly on the years surrounding the 2008 financial crisis, evaluating only the 109th to 112th congresses. Marr's study is the first that employs a state-based approach by testing income inequality data specific to particular states against the election of more liberal or more conservative Senators from each state. Although the study consider for

state-based income inequality measures, it still focuses solely on Senators in the federal government. This leaves a major potential gap for further research combining both state level income inequality data, as well as state level polarization measurements. Additionally, Marr (2014) only focuses on a brief time period of six years, which leaves room for considering a fuller time frame to give a more complete picture. Overall, since this study examines three different factors it provides a better big picture and broad analysis, but it does not target the two main variables of interest as extensively as other more focused studies.

A study by Akdede (2012) furthermore explores the question of income inequality and political polarization through an empirical investigation of European countries. While this does not directly apply to the U.S., the study is very helpful for seeing how the relationship operates on a global level in other highly developed democratic nations. Akdede creates indices to measure political polarization and political fracturalization across 17 countries in parliamentary elections between 1980 and 2008. The study then uses a random effects regression test—after confirming its appropriateness via a Hasuman test—by running the time panel data against the log of the Gini index and the control variables of net migration, GDP, unemployment, and ethnic and religious diversity. The study finds a statistically significant effect of income inequality on political polarization. Therefore, the results suggest a similar connection between the two variables despite different political systems and geographic regions.

Ultimately, all the previous literature help provide background, context, and additional direction for evaluating the research question of interest. The previous studies provide both great ideas for methods and measurement standards already considered, but also leave ample space for further exploration and original research. While the nascent literature provides initial support for hypothesizing that there exists a positive link between income inequality and political polarization, it focuses almost exclusively on a federal level analysis. How this relationship operates on a state level remains to be explored. Specifically, the scope of this research, then, fills that gap by evaluating how increased income inequality on the state level influences the election of state representatives and senators with more or less extreme or polarized views.

DATA

To evaluate the research question two primary sources of data are used to measure the main variables of interest. Data on state-level income inequality is drawn from the Frank-Sommeiller-Price Series. The series developed by Mark Frank, Estelle Sommeiller, and Mark Price compiles data on income inequality for each U.S. state from 1917-2012. This expansive set offers a comprehensive panel of annual state-level income inequality measures that were constructed from individual tax filing data available from the Internal Revenue Service. The data is broken down into a panel based on time and categorized by state. Data for five different measures of income inequality are provided.

To measure state level political polarization, data is drawn from the Shor-McCarty State Legislative Aggregate Ideology data set from 1993- 2014. This data set developed by Shor and McCarty, two political scientists, operationalizes political ideology based on individual-level ideal point estimates termed "Shor-McCarty NPAT Scores." The scores are generated via numerically assigning value to a spectrum of political ideologies and then calculating chamber medians in each state. In calculating the scores, Shor and McCarty generate bootstrapped error estimates and iterate over a large number of simulations to incorporate measures of aggregate uncertainty and ensure accuracy of scores. Estimates in the data set are all in NPAT common ideological space to facilitate explicit comparisons across time and between states. It is important to note that not all state years have measurements, due to the ragged availability of state legislative roll call data; however, the Shor-McCarty data is the most comprehensive available. Drawing from these main data sets, the variables of interest are defined.

Key Variables:

Political Polarization per state legislature
- _diffs (House & Senate)

This index measures the distance between party medians, by chamber. Based on Shor-McCarty's description and analysis of their data set, this is the preferred measure of polarization.
- _distance (House & Senate)

This index measures the average distance between any two members, by chamber. This is an alternative, party-free, measure of polarization.

Income Inequality per state
- Gini Coefficient

The Gini coefficient, which is the most commonly known and used measure of income inequality, is defined by Frank (2012) as representing the average distance between all pairs of proportional income in the population. It varies between zero and one, with higher values indicating greater inequality, and is known for being sensitive to transfers in the middle of the income distribution
- Atkinson Index

Frank (2012) defines the Atkinson index of inequality as a social welfare function based on a measure of inequality bound between zero and one, with higher values indicating greater inequality. It is analytically appealing since it is both decomposable and satisfies the weak principle of transfers. The Atkinson index the data series employs uses an inequality aversion parameter (ε) of 0.5, meaning the index is more sensitive to changes in the upper-end of the income distribution.
- Relative Mean Deviation

The relative mean deviation is defined by Frank (2012) as representing the average absolute distance between each person's income and the mean income of the population. It varies between zero and two, with larger values indicating higher inequality.
- Theil Index

The Theil index is an unbound derivative of statistical information theory where larger values indicate greater income inequality. The index measures an entropic distance between the population and the "ideal" egalitarian state of everyone having the same income. Frank (2012) determines this index to be the preferred measure of income inequality given his analysis of the data sets collected.

In addition, control variables are established based on those featured in the previous literature reviewed. Specifying control variables are exceptionally difficult for this analysis because the major influences on political polarization in previous literature are more qualitative and difficult to operationalize. For instance, media fragmentation and influence has been studied as a factor, however, this is yet to be easily measurable and testable. With panel-data analysis, nevertheless, the most important variables to control for are those that are not constant over time.

Control Variables:
- PresElection: This is a dummy variable signifying if the year considered is also the year of a major presidential election. This could influence voter turnout and affect polarization on the state level for that specific year.
- PresSecondTerm: This is a dummy variable signifying if it is a president's second term election. The use of this control is based on the Duca and Saving (2014) study that found this to be the only significant variable with an effect on polarization in itsanalysis.
- Recession: This is a dummy variable to control for the years of the recession for 2008 and 2009. The recession is controlled for as a potential factor influencing and exacerbating income inequality.

EMPIRICAL MODEL

Due to the nature of the data, across 19 years of time and across 50 categories of states, panel-data analysis is the most fitting. Panel data allows for controlling for variables that cannot observed or measured such as cultural factors or differences in public interests across states, or variables that change over time but not across entities (i.e. state-level policies, election laws, federal regulations, etc.). That is, it accounts for individual heterogeneity. The panel data method, thus, is especially helpful in addressing the research question since there are many factors and variables involved in tackling political polarization and income inequality.

Both fixed effects and random effects regression models are used to analyze the panel data. If there are omitted variables, and these variables are correlated with the variables in the model, then the fixed effects model helps provide a means for controlling for omitted variable bias for time-invariant effects. If the data fits well with the random effects model, it can provide unbiased estimates of the coefficients, use all the data available, and produce the smallest standard errors. Random effects regression assumes that the unobserved heterogeneities in a dataset are random noise, however, and the estimates then may be biased because of the lack of control for omitted variables. Both models are used to test the research question and then are tested against each other with a Hausman test, which provides indication for which model can be preferred.

The regression models are run with the states as categories, the political polarization standards as the dependent variable, and the income inequality measures along with the control variables as the explanatory variables. Sixteen separate regressions are completed for each of the four income equality indices and the four polarization measures. Testing a variety of models allows for a more thorough analysis of the research question and for more interesting and comprehensive results and conclusions.

RESULTS

The following table summarizes the results of the Fixed Effects regression with House differences as the measure of political polarization and a different model for each of the income inequality indices.

TABLE 1
HOUSE DIFFERENCES FIXED EFFECTS REGRESSION

VARIABLES	(1) h_diffs_theil h_diffs	(2) h_diffs_gini h_diffs	(3) h_diffs_rmeandev h_diffs	(4) h_diffs_atkin05 h_diffs
theil	-0.178***			
	(0.0607)			
PresElection	-0.0172	-0.0299***	-0.0293**	-0.0127
	(0.0110)	(0.0105)	(0.0115)	(0.0127)
Pres2ndTerm	0.559***	0.488***	0.464***	0.575***
	(0.0476)	(0.0521)	(0.0574)	(0.0509)
recession	0.419***	0.375***	0.360***	0.443***
	(0.0390)	(0.0416)	(0.0452)	(0.0409)
gini		0.453		
		(0.272)		
rmeandev			0.474	
			(0.452)	
atkin05				-1.040**
				(0.415)
Constant	1.215***	0.848***	0.736**	1.341***
	(0.0596)	(0.157)	(0.356)	(0.107)
Observations	811	811	811	811
R-squared	0.503	0.499	0.498	0.502

The following table summarizes the results of the Random Effects regression with House differences as the measure of political polarization and a different model for each of the income inequality indices:

TABLE 2
HOUSE DIFFERENCES RANDOM EFFECTS REGRESSION

VARIABLES	(1) h_diffs_theilr h_diffs	(2) h_diffs_ginir h_diffs	(3) h_diffs_rmeandevr h_diffs	(4) h_diffs_atkin05r h_diffs
theil	-0.169*** (0.0604)			
PresElection	-0.0179 (0.0111)	-0.0301*** (0.0106)	-0.0296** (0.0116)	-0.0137 (0.0128)
Pres2ndTerm	0.556*** (0.0482)	0.487*** (0.0527)	0.461*** (0.0579)	0.570*** (0.0515)
recession	0.417*** (0.0396)	0.374*** (0.0422)	0.357*** (0.0460)	0.439*** (0.0416)
gini		0.457* (0.269)		
rmeandev			0.502 (0.446)	
atkin05				-0.977** (0.413)
Constant	1.196*** (0.104)	0.834*** (0.169)	0.702* (0.361)	1.313*** (0.138)
Observations	811	811	811	811

A Hausman test comparing the fixed to the random resulted in a very small Hausman statistic, thus revealing a preference for the random effects model, which will be the focus of the results. However, the results from each model are quite similar, rendering the difference resulting from selecting one model minimal. Both models result in the most significant t-statistic for the Theil index as a measure of income inequality influencing inter-party polarization in the House chambers. The Atkins index also has significance at the 5% level and the Gini index is significant at the 1% level. In regards to the control variables, the variables for a president's second term and the recession both are also significant at the 1% level. The constant term also is significant at the 1% level, indicating that there remain potential variables at play unaccounted for. Most interestingly, however, is that the theil index, which has the most significant result, has a negative coefficient (-0.169), which would suggest the opposite direction of higher income inequality resulting in lower polarization.

The following table summarizes the results of the Fixed Effects regression with Senate differences as the measure of political polarization and a different model for each of the income inequality indices:

TABLE 3
SENATE DIFFERENCES FIXED EFFECTS REGRESSION

VARIABLES	(1) s_diffs_theil s_diffs	(2) s_diffs_gini s_diffs	(3) s_diffs_rmeandev s_diffs	(4) s_diffs_atkin05 s_diffs
theil	0.00645			
	(0.110)			
PresElection	-0.0465*	-0.0504*	-0.0507*	-0.0515*
	(0.0272)	(0.0270)	(0.0278)	(0.0299)
Pres2ndTerm	0.549***	0.513***	0.468***	0.527***
	(0.118)	(0.128)	(0.151)	(0.123)
recession	0.392***	0.360***	0.330**	0.376***
	(0.115)	(0.123)	(0.133)	(0.116)
gini		0.628		
		(0.655)		
rmeandev			0.779	
			(0.945)	
atkin05				0.400
				(0.896)
Constant	1.077***	0.734*	0.485	0.989***
	(0.144)	(0.378)	(0.743)	(0.251)
Observations	823	823	823	823
R-squared	0.250	0.254	0.254	0.251

The following table summarizes the results of the Random Effects regression with Senate differences as the measure of political polarization:

TABLE 4
SENATE DIFFERENCES RANDOM EFFECTS REGRESSION

VARIABLES	(1) s_diffs_theilr s_diffs	(2) s_diffs_ginir s_diffs	(3) s_diffs_rmeandevr s_diffs	(4) s_diffs_atkin05r s_diffs
theil	0.0149 (0.110)			
PresElection	-0.0469* (0.0272)	-0.0504* (0.0270)	-0.0509* (0.0278)	-0.0523* (0.0298)
Pres2ndTerm	0.545*** (0.115)	0.512*** (0.126)	0.463*** (0.144)	0.522*** (0.119)
recession	0.390*** (0.113)	0.359*** (0.121)	0.326*** (0.127)	0.372*** (0.113)
gini		0.625 (0.647)		
rmeandev			0.812 (0.909)	
atkin05				0.458 (0.876)
Constant	1.066*** (0.135)	0.730** (0.369)	0.454 (0.706)	0.970*** (0.236)
Observations	823	823	823	823

Similar to the previous model, the Hausman test resulted in a preference for the random effects regression. This Hausman result, indeed, was consistent across all models. In the senate chamber, however, as opposed to the House, none of the income inequality measures were significant at below a 10% level. These results, then, conflict with the expectations of the initial hypothesis.

The following table summarizes the results of the Fixed Effects regression with House distance as the measure of political polarization and a different model for each of the income inequality indices:

TABLE 5
HOUSE DISTANCE FIXED EFFECTS REGRESSION

VARIABLES	(1) h_distance_theil h_distance	(2) h_distance_gini h_distance	(3) h_distance_rmeandev h_distance	(4) h_distance_atkin05 h_distance
theil	-0.0799**			
	(0.0378)			
PresElection	-0.0120	-0.0179**	-0.0170**	-0.00911
	(0.00779)	(0.00784)	(0.00769)	(0.00802)
Pres2ndTerm	0.222***	0.188***	0.186***	0.233***
	(0.0288)	(0.0326)	(0.0357)	(0.0298)
recession	0.160***	0.139***	0.139***	0.174***
	(0.0212)	(0.0240)	(0.0269)	(0.0214)
gini		0.232		
		(0.154)		
rmeandev			0.143	
			(0.253)	
atkin05				-0.530**
				(0.228)
Constant	0.772***	0.591***	0.610***	0.843***
	(0.0371)	(0.0878)	(0.201)	(0.0615)
Observations	811	811	811	811
R-squared	0.315	0.312	0.309	0.316

This table summarizes the results of the Random Effects regression with House distance as the measure of political polarization:

TABLE 6
HOUSE DISTANCE RANDOM EFFECTS REGRESSION

VARIABLES	(1) h_distance_theilr h_distance	(2) h_distance_ginir h_distance	(3) h_distance_rmeandevr h_distance	(4) h_distance_atkin05r h_distance
theil	-0.0769**			
	(0.0387)			
PresElection	-0.0123	-0.0180**	-0.0172**	-0.00952
	(0.00777)	(0.00784)	(0.00769)	(0.00800)
Pres2ndTerm	0.221***	0.188***	0.185***	0.231***
	(0.0292)	(0.0328)	(0.0359)	(0.0303)
recession	0.160***	0.139***	0.138***	0.173***
	(0.0215)	(0.0242)	(0.0272)	(0.0218)
gini		0.234		
		(0.151)		
rmeandev			0.154	
			(0.251)	
atkin05				-0.508**
				(0.234)
Constant	0.762***	0.582***	0.594***	0.830***
	(0.0570)	(0.100)	(0.204)	(0.0738)
Observations	811	811	811	811

The outcome here is more similar to the House differences results, with the theil and atkins indices being most significant at a 5% level. Also, again, both these measures reveal a negative coefficient, suggesting a negative relationship, rather than an originally hypothesized positive connection. Results regarding the control variables are consistent with the previous models as well.

Finally, the following table summarizes the results of the Fixed Effects regression with Senate distance as the measure of political polarization and a different model for each of the income inequality indices:

TABLE 7
SENATE DISTANCE FIXED EFFECTS REGRESSION

VARIABLES	(1) s_distance_theil s_distance	(2) s_distance_gini s_distance	(3) s_distance_rmeandev s_distance	(4) s_distance_atkin05 s_distance
theil	-0.0433			
	(0.0580)			
PresElection	-0.0208*	-0.0255**	-0.0239**	-0.0190
	(0.0114)	(0.0113)	(0.0114)	(0.0119)
Pres2ndTerm	0.211***	0.179***	0.185***	0.218***
	(0.0452)	(0.0416)	(0.0482)	(0.0474)
recession	0.183***	0.160***	0.167***	0.191***
	(0.0386)	(0.0383)	(0.0422)	(0.0417)
gini		0.347		
		(0.252)		
rmeandev			0.139	
			(0.281)	
atkin05				-0.307
				(0.333)
Constant	0.738***	0.518***	0.603***	0.781***
	(0.0476)	(0.147)	(0.216)	(0.0805)
Observations	823	823	823	823
R-squared	0.128	0.133	0.128	0.129

And the Random Effects regression results:

TABLE 8
SENATE DISTANCE RANDOM EFFECTS REGRESSION

VARIABLES	(1) s_distance_theilr s_distance	(2) s_distance_ginir s_distance	(3) s_distance_rmeandevr s_distance	(4) s_distance_atkin05r s_distance
theil	-0.0405			
	(0.0585)			
PresElection	-0.0211*	-0.0256**	-0.0242**	-0.0195
	(0.0114)	(0.0113)	(0.0115)	(0.0120)
Pres2ndTerm	0.210***	0.179***	0.183***	0.216***
	(0.0444)	(0.0411)	(0.0469)	(0.0464)
recession	0.182***	0.160***	0.165***	0.190***
	(0.0380)	(0.0378)	(0.0411)	(0.0408)
gini		0.345		
		(0.252)		
rmeandev			0.156	
			(0.282)	
atkin05				-0.279
				(0.335)
Constant	0.731***	0.514***	0.586***	0.769***
	(0.0514)	(0.146)	(0.213)	(0.0806)
Observations	823	823	823	823

Similar to the results of the senate differences models, the income inequality indices here also reveal no real significance or strong connection.

CONCLUSIONS

As illustrated above, the outcomes of the regressions ultimately reveal very interesting results that appear to run counter to the original hypothesis. The first conclusion that can be drawn is that the existence of a causal link between income inequality and political polarization on the state level is not supported by the data. Regardless of the different measures of inequality or polarization, the results are not convincing enough to conclude a positive connection. Indeed, there is even evidence, based on the theil and atkins index and the polarization in the house chambers, that there may in fact be a negative effect of income inequality on polarization. The theil index was described by Frank (2012), the originator of the dataset, as the best measure of inequality based on its entropy features that allows it to best emulate the trends of overall changes in income shares. The fact that this index, then, was the most significant and the one with most clear negative coefficient lends further credibility to the conclusion. Based on the Shor-McCarty description of the polarization datasets, the "differences" measurement is preferred to the "distances" measurements. Most interestingly, while the differences did have more significant results, the discrepancy in significance of the models was most apparent across chambers. Indeed, the models barely held up when looking at the senate chambers. This begs the question of what the difference is between members of house chambers versus senate chambers that would lead to the starkly different results. One potential cause could be that the House of Delegates typically serve shorter terms and go through less competitive races to become elected. Understanding the political differences behind this result, though, would require additional studies and is an area for further research beyond the scope of this study.

Additionally, worth noting is the role of the control variables in all of the models. The variables for presidential second term and recession each proved to be consistently significant across all models and methods of measurement. The constant coefficient also behaved similarly. The significance of the control variables, then, as opposed to the main variables of interest, reveal that there are many more factors at play that further weaken support for the hypothesis. Indeed, since controlling for all factors in previous studies has been extremely difficult, these results suggest that those studies may also contain omitted variable bias. Adding more control variables may further weaken the significance of inequality on influencing polarization and weaken the proposed connection. This suggests that there just may be many factors involved that influence both polarization and income inequality and the simultaneous increasing trend of both is most likely the result of a correlation, instead of causation. This follows, at least, on the state level.

Overall, all these conclusions that follow from the regression models are in opposition to the original proposed hypothesis and the suggestions of previous studies. Since none of the previous studies specifically looked at a total state level analysis, the results here are especially interesting. Applying the research question to the state level allowed for a more localized and controlled approach. The panel-data further honed the method by controlling for any time invariant effects and providing a more precise setting than purely federal studies. Breaking this overarching relationship down to a more micro-level reveals that the relationship does not quite hold up and calls into question the original inferences of researchers. This then has significant implications both on the policy level, and also on the research level.

 Of course, the results of this study, however, are not entirely conclusive. There are still many areas for further improvement and research. There currently are not available additional data sets for measuring polarization in state legislatures, but it is possible that a different method for operationalizing this could be developed. This study also was restricted to the two decades of overlapping data, but it is possible that a more robust time frame could further bolster the study. Additionally, exploring the effects of more control variables, interaction terms, and bidirectional feedbacks are other areas for further consideration. Also, different types of regression models, beyond random and fixed effects, should be developed and tested against the question. As one of the first studies to apply the research question directly to state-level data, however, this opens the door for further and closer examination of the question at hand. It provides a basis for questioning what was thought to be an intuitive connection and a starting point for developing further research. The results of this study then, although opposing the initial hypothesis, are ultimately in fact much more interesting than if they were to simply support the original expectations. Ultimately, this study both contributes to a gap in the literature as one of the first of its kind and also invites researchers to further develop studies evaluating the question of interest.

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