

# Fiscal Opportunity Coupled with Political Willingness?

## Unpacking the Effects of TELs and Partisan Governments on Income Inequality in the American States, 1986–2020

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## **Abstract**

To properly understand how governments shape policy outcomes, it is critical to decompose two distinct sources of public policymaking: rules and discretion. A simple decomposition strategy is proposed for distinguishing between rule-based (tax and expenditure limitations: TELs) and discretionary (partisan governments) policymaking effects on income inequality in the American states from 1986-2020. This analytical strategy is rooted in the joint rule-discretionary policymaking context, and hence, is easily portable to other empirical settings seeking to evaluate the independent consequences of rule-based versus discretionary policymaking on policy outcomes. For the most part, the statistical evidence shows that income inequality is generally unaffected by both fiscal rules (*TELS*) and discretionary policy making authority (*partisan control of state governments*) contrary to statistical evidence observed in the American states. This evidence underscores the importance of disentangling policy mechanisms that jointly occur when evaluating the consequences of government policymaking authority.

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Widening income disparities among citizens have transpired in both the United States and elsewhere around the world in recent decades (e.g., Atkinson and Piketty 2010). Much of this problem is attributed to the income gains made by super-wealthy citizens and powerful interests (Piketty and Saez 2003; Sommelier and Price 2014). Rising income inequality is a serious public policy problem worthy of government attention. Expanding income inequality, for instance, has been associated with increased political polarization (e.g., McCarty, Poole, and Rosenthal 2006), greater disparities favoring campaign contributions made by the wealthiest U.S. citizens (Bonica and Rosenthal 2018), and more broadly, democratic erosion (e.g., Boix 2003; Waldner and Lust 2018; cf. Scheve and Stasavage 2017). In the American states, two primary policy mechanisms are documented in the analysis of income inequality: (1) the discretionary policymaking authority exercised by partisan governments, and (2) whether a state government has formal tax and expenditure limitations (TELS) as a fiscal rule.

*Discretion* pertains to the ability of government officials to use the various policymaking levers at their disposal, subject to constraints imposed by other governmental decision-makers. Discretionary policymaking authority is exercised by partisan governments through various levers of government authority to favor either business or labor interests (e.g., Kenworthy and Pontusson 2005; Brady and Leicht 2008; Vogel 2003). Specifically, left-leaning partisan governments' preferred policies resulting in redistributing income in favor of the working class while right-leaning partisan governments' preferred policies that yield a more favorable income distribution for affluent citizens at the expense of less affluent citizens (e.g., Bartels 2016; Franko and Witko 2018; Kelly 2009; Kelly and Witko 2012).

*Rules* represent institutional constraints that can either limit or empower policymakers' ability to exercise their discretionary governmental authority. TELs serve as a fiscal rule that favors the distribution of income toward affluent citizens and away from both middle and lower socioeconomic groups, regardless of discretionary policymaking undertaken by partisan governments. TELs act as a constraint on government efforts to reduce income inequality through various channels. TELs contribute to restricting expenditures, including those devoted to redistributive policies and programs aimed at reducing income inequality. For example, higher levels of K-12 public school expenditures are associated with both higher wages and reduction in adult poverty rates (Jackson, Johnson, and Persico 2016). TELs can also restrict the amount and mix of revenue sources relied on by states. Lower levels of revenue reduce discretionary resources to limit growth in funding to address social policy problems including the areas of public housing, education, and health care, plus redistributive policies to increase the minimum wage (Hatch and Rigby 2015; Kelly and Witko 2012). Finally, TELs exacerbate income inequality by altering market-based tax incentives for affluent individuals (Gruber and Saez 2002). Recent research finds that TELs are positively correlated with higher market-based income inequality in the American states (Deller, Maher, and Stallmann 2021).

Unfortunately, existing studies are incapable of identifying how these distinct rule and discretionary policymaking mechanisms shape income inequality in the American states. At a given point in time, each state governs under the joint condition of a specified fiscal rule (*TEL or No TEL*), and partisan government elected to hold office (*Unified Democratic, Unified Republican, or Divided Partisan*) that controls discretionary policymaking authority. Isolating the distinct effects of rules from discretionary policymaking can address the conditions when each

mechanism is capable of exerting policy effects on income inequality. This study addresses both concerns by proposing a simple decomposition analytical strategy that is capable of delineating how the interplay between how TELs and partisan governments shape income inequality in the American states. Fiscal rule effects isolate the differential effect between a state operating under a TEL versus No TEL on state income inequality for a given partisan government regime (*Between-TEL, Within-Partisan Effects*). Discretionary policymaking effects isolate the differential effects between partisan government regimes for a given a fiscal rule (*Between-Partisan, Within-TEL Effects*). The statistical evidence from a panel of American states from 1986-2020 underscore the limits of both rules and discretionary policymaking to shape policy outcomes. Specifically, the overwhelming majority of empirical tests conducted in this study shows that income inequality is unaffected by whether a state has a TEL or is dependent upon which political party controls state governments. One notable exception emphasizes the importance of policy compatibility between rules and discretion as policymaking conditions occurs with respect to unified Republican governments' ability to generate higher income inequality when operating under a state TEL restriction. More broadly, these findings suggest that evidence of policymaking effects on income inequality with varying rules and partisan governments are prone to falsely overstating the ability of institutions to shape income inequality.

### **TELS, Partisan Politics, and Income Inequality in the American States**

The stylized facts regarding how partisan politics shapes income inequality is firmly established. Left-leaning (Democratic) political parties advocate for income redistribution since they tend to represent the policy interests of labor; whereas, right-leaning (Republican) political parties tend to be staunch advocates for business (e.g., Bartels 2016; Kelly 2009; 2020;

Kenworthy and Pontusson 2005). In the American states, unified partisan control of governors and state legislatures are often necessary to ensure the transmission of partisan policy preferences into state policies which requires robust control of government policymaking levers by a single party (Barrilleaux, Holbrook, and Langer 2002) – a point substantiated in studies analyzing the partisan government basis of income inequality (e.g., Bartels 2016; Berkowitz and Krause 2020; Franko and Witko 2018; Kelly 2009; Kelly and Witko 2012). Elected partisan government regimes employ the discretionary levers of policymaking authority to attain their respective preferred distribution of income. Partisan government differences involving income inequality can also be manifested through social safety net programs when state governments exercise discretion in public finance, administrative rulemaking, and autonomy with respect to program administration (Bruch, Meyers, and Gornick 2018). Grumbach (2018) finds that partisan control of state governments yields differential policy outcomes in socioeconomic policy areas such as health and welfare, housing and transportation, labor, and taxation.

Although offering an important empirical policy-based foundation for the study of income inequality, existing studies are unable to properly ascertain whether the underlying policy sources of income inequality is attributable to the exercise of discretionary authority by partisan governments, or instead reflects ruled-based policy constraints that limit partisan governments from attaining their desired policy goals. Current research analyzing the effect of government policymaking on income inequality does not consider each source as jointly operating in tandem. Tax and expenditure limitations (TEs) serve as a critical fiscal rule that affects the distribution of income within American states. TEs impose a set of budget constraints that restrict the ability of state governments to generate revenue or make

expenditures through constitutional or statutory provisions (Mullins and Joyce 1996; Mullins and Wallin 2004). As of 2020, thirty-three states have at least one TEL including states that require a supermajority vote to raise new taxes or revenues (*Tax Policy Center* 2020). The TELs that restrict state finances can be traditionally classified as revenue limits, expenditure limits, appropriation limits, or a combination of them (Kioko 2011). Revenue limitations seek to restrict state governments' taxing authority by reducing revenue generation, while expenditure and appropriations limits restrict these governments' spending authority. Spending authority limitations are the most common form of TEL, with 25 states limiting spending in 2020.<sup>1</sup>

Although the impact of state government TELs achieving the purpose of limiting taxation and expenditure growth is mixed (e.g., Kousser, et al 2008; cf. Bae and Jung 2011), extant research suggests that this fiscal mechanism exerts income distributional effects. TELs constitute a status quo bias in state policymaking insofar that these fiscal rules represent an institutional constraint that exacerbates income inequality that is distinct from discretionary policymaking activities of electoral institutions (Enns, et al 2014; Hacker and Pierson 2010). TELs restrict discretionary policies that both distribute and redistribute government benefits, and hence, exert downstream effects on income inequality in three primary ways. First, TELs can impose expenditure restrictions to decrease spending on redistributive policies and social spending aimed at reducing income inequality. Lower income inequality levels or growth

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<sup>1</sup> States operating under a TEL might experience revenue or expenditure growth if restrictions are confined to estimates. Delaware, Iowa, Mississippi, Oklahoma, and Rhode Island have estimated revenue limitations and thus, limits are on the initial budget balance rather than actual revenue growth.

occurs in states with the expansion of redistributive policies (Hatch and Rigby 2015), including higher minimum wage laws (Kelly and Witko 2012; see also, Franko and Witko 2018). State governments' policymaking efforts at addressing socioeconomic problems has tangible downstream consequences for income inequality (Franko and Witko 2018; Grumbach 2018; Hertel-Fernandez, Skocpol, and Lynch 2016). When TELs limit funding of social spending and redistributive policies, income inequality is likely to increase. Second, TELs impose restrictions that limit the ability of state resources, which can disproportionately benefit affluent residents while harming less affluent residents. States restricted in their ability to generate revenue from taxation often shift the mix of sources of revenue from taxes and intergovernmental aid to more reliance on miscellaneous sources of revenue (Amiel, et al. 2014). Finally, TELs might alter tax rates and the responsiveness of individual residents to those rates since individuals with higher wealth are thus more likely to shift their assets to lower taxed areas or decrease their income share by working less (Gruber and Saez 2002). Although a positive correlation is observed between TELs and state market-based income inequality (Deller, Maher, and Stallmann 2021), it is unclear whether this fiscal mechanism exerts an effect on income inequality that is not confounded by partisan control of state governments. The decomposition framework advanced in this study estimates the distinct income inequality effects emanating from the presence or absence of a TEL versus discretionary behavior of partisan governments.

### **Decomposition of Partisan Politics and TEL Effects on Income Inequality: Identifying Rules versus Discretion Mechanisms of Government Policymaking**

Disentangling the policymaking mechanisms involving tax and expenditure limitations (TELS) and partisan control over the levers of state government requires evaluating the distinct



influence of each component on income inequality in the American states. **Table 1** depicts a framework for analyzing *joint* combinations of TELs and partisan government regimes that exist in the American states. Formal policy restrictions via a TEL (*fiscal opportunity*) makes it more conducive that the discretionary policies made by Republican partisan governments (*political willingness*) exacerbate income inequality since both rules and discretion are policy compatible under this governance arrangement (*Policy Compatible: Maximum Inequality*). An absence of a TEL is policy compatible with facilitating Democratic partisan governments' ability to create policies that target benefits to non-affluent citizens in a manner that limits affluent citizens' ability to enhance their income (*Policy Compatible: Minimum Inequality*).

**TABLE 1**

**Alternative TEL and Discretionary Policymaking Mechanism Regime Joint Combinations**

	Discretionary Policymaking Regime		
TEL Regime	Unified Democratic	Divided Control	Unified Republican
No TEL	Policy Compatible <i>(Minimum Inequality)</i>	Mixed	Policy Incompatible
TEL	Policy Incompatible	Mixed	Policy Compatible <i>(Maximum Inequality)</i>

Instances where these policymaking mechanisms are incompatible occur when a unified Republican (Democratic) partisan government seeks to adopt policies that reduce (increase) income inequality, but do not operate under a TEL (existence of a TEL) restriction that works at cross-purposes with respect to discretionary policymaking efforts. Incompatible policymaking rules offer a challenge for discretionary policymaking by unified partisan governments since

they must offset either the absence or presence of a TEL to attain policies consistent with their desired level of income distribution. Finally, divided partisan control of state governments represents a mixed combination of policymaking mechanisms since partisan control of government is neither aligned nor at odds in relation to the TEL regime. It is plausible that the potency of a given TEL regime might take on greater importance when discretionary policymaking is fragmented between political parties in U.S. state governments.

*Analytical Strategy: Decomposition of Rule-Based versus Discretionary Policymaking Effects*

To distinguish between TEL and partisan government control effects on income inequality, six joint policymaking conditions previously denoted in **Table 1** are considered. These joint policymaking mechanisms reflect various combinations of TEL regimes (*No TEL, TEL*) and discretionary policymaking authority (*Unified Democratic Control [UDC] Governments, Divided Partisan Control [DPC] Governments, and Unified Republican Control [URC] Governments*). In notation form, these joint policymaking conditions are defined as:

$$\mathbf{T}_{No\ TEL|UDC}, \mathbf{T}_{TEL|UDC}; \mathbf{T}_{No\ TEL|DPC}, \mathbf{T}_{TEL|DPC}; \mathbf{T}_{No\ TEL|URC}, \mathbf{T}_{TEL|URC} \cdot (1)$$

These joint policymaking conditions allow for the evaluation of how rule and discretionary policymaking mechanisms are associated with income inequality in the American states. Under conditions of policymaking compatibility, income inequality should be maximized under unified Republican governments operating under a TEL restriction ( $\mathbf{T}_{TEL|URC}$ ), while minimized in the absence of a TEL when Democratic party controls state governments ( $\mathbf{T}_{No\ TEL|UDC}$ ).

Decomposition of policymaking effects is obtained by isolating the effect for each type of policymaking mechanism, while holding fixed the remaining policymaking mechanism. In turn,

this produces a set of *between-within* policymaking mechanism estimates, where the *between* component isolates the effect of a particular policymaking mechanism of interest, while the *within* component pertains to the remaining fixed policymaking mechanism. Isolating the effects of TELs on income inequality requires holding partisan government regime fixed necessitates an analysis of the between-TEL regime, within-partisan government effect. Analytically, these TEL effects are defined accordingly under each respective partisan government regime:

$$\begin{aligned}
\mathbf{T}_{TEL-No\ TEL|UDC} &= \mathbf{T}_{TEL|UDC} - \mathbf{T}_{No\ TEL|UDC} \\
\mathbf{T}_{TEL-No\ TEL|URC} &= \mathbf{T}_{TEL|URC} - \mathbf{T}_{No\ TEL|URC} \quad . \\
\mathbf{T}_{TEL-No\ TEL|DPC} &= \mathbf{T}_{TEL|DPC} - \mathbf{T}_{No\ TEL|DPC}
\end{aligned} \tag{2}$$

The fiscal rule effects displayed by Equation (2) isolates the effect of TELs on income inequality within each discretionary policymaking (partisan government control) regime.

Isolating the effects of income inequality attributable to partisan governments' control over the levers of authority requires evaluating differential treatment effects separately for *No TEL* and *TEL* fiscal conditions, while holding each partisan government regime fixed.

Predicated on equation (1), the estimable quantities of interest for evaluating partisan government regime discretionary policymaking effects on income inequality are defined as:

$$\begin{aligned}
\mathbf{T}_{URC-UDC|No\ TEL} &= \mathbf{T}_{URC|No\ TEL} - \mathbf{T}_{UDC|No\ TEL} \\
\mathbf{T}_{URC-DPC|No\ TEL} &= \mathbf{T}_{URC|No\ TEL} - \mathbf{T}_{DPC|No\ TEL} \\
\mathbf{T}_{DPC-UDC|No\ TEL} &= \mathbf{T}_{DPC|No\ TEL} - \mathbf{T}_{UDC|No\ TEL}
\end{aligned} \tag{3a}$$

and

$$\begin{aligned}
T_{URC-UDC|TEL} &= T_{URC|TEL} - T_{UDC|TEL} \\
T_{URC-DPC|TEL} &= T_{URC|TEL} - T_{DPC|TEL} \\
T_{DPC-UDC|TEL} &= T_{DPC|TEL} - T_{UDC|TEL}
\end{aligned}
\tag{3b}$$

In both Equations (3a) and (3b), the effect of partisan governments on income inequality relies on holding the TEL regime fixed. Now with the analytical foundations firmly established, the data and statistical methods are discussed in the next section.

### **Data and Empirical Strategy**

Panel data for 49 U.S. state governments from 1986 to 2020 ( $N \times T = 1,715$ ) are analyzed to evaluate the isolated effects attributable to TELs and partisan government regimes on income inequality in the American states.<sup>2</sup> All income measures for the American states focus on market-based (adjusted gross [pre-tax]) income that includes not merely wages and salaries, but also capital income, proprietorship income, and cash and in-kind payments from various government programs such as Social Security, AFDC, food stamps, and health insurance (see Owyang and Shell 2016: 2, Note 2).<sup>3</sup> Market-based income measures account for a wide range of income that reflects how most government policies shape pre-tax income through education, welfare, and employment opportunities (Franko 2021: Note 7; see also, Hayes and Medina Vidal

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<sup>2</sup> Nebraska is excluded since it has a non-partisan, unicameral legislature.

<sup>3</sup> Both income from intergovernmental transfers and interest payments on state and local bonds are excluded from market-based income inequality measures (see Deller, Maher, and Stallmann 2021: 623).

2015).<sup>4</sup> At present, obtaining both reliable and consistent data of post-tax income in the American states to construct income inequality measures is infeasible.<sup>5</sup> Nonetheless, market-based income measures of income inequality derived from IRS tax filings have several advantages in terms of both coverage (both individuals and income sources) and reduced bias compared to survey-based measures generated from CPS and ACS sources (Schwendel, Jr. and Mohtadi 2019: 5-7).

The first dependent variable measuring state income inequality is the Atkinson index, which is bounded between zero and 100 (percentage terms), with higher values indicating greater income inequality. Income inequality is also measured using Theil's entropy index, which is an unbounded derivative of statistical information theory where larger values indicate greater income inequality.<sup>6</sup> Both index measures capture the overall distribution of income

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<sup>4</sup> These sources of market income greatly outweigh the impact of direct cash transfers on income inequality (see Franko 2021: Note 7; see also, McCall and Percheski 2010).

<sup>5</sup> The U.S. federal government's Current Population Survey (CPS) and American Community Survey (ACS) and Luxembourg Income Study (LIS) data, where the latter is based on the former, suffer from under sampling in smaller states, as well as incomplete measurement through time (LIS Correspondence with first author, 11-14-2023; CPS/ACS Correspondence with first author, 11-14-2023). These data are unavailable in the World Income Database (WID) (WID Correspondence with first author, 11-16-2023).

<sup>6</sup> Data for both the Atkinson index and Theil's entropy index were collected from Frank (2014, 2023). Income inequality measures with inferior properties (Gini Coefficient and Relative Mean Deviation indices) are analyzed in the supplementary analyses located in the *Online Appendix* document (**Appendix D**). Both the Gini coefficient and Relative Mean Deviation income inequality index measures

among all residents within a state for a given year. In addition, measures of income inequality isolating affluent citizens' incomes representing the top decile of the income distribution are also analyzed (e.g., Sommelier and Price 2014; Frank 2014, 2023). These measures are based on income shares for the Top 10% and Top 1% income groups per state-year developed by both Frank (2014, 2023) and Sommeiller-Price (2014).<sup>7</sup> Higher values of these measures signify higher income inequality as the income share is rising per income share group. Focusing on both overall income inequality and top decile income shares of affluent citizens allows one to ascertain the socioeconomic nature of income inequality.<sup>8</sup>

The treatment variables are defined as a series of binary indicator variables based on the six combinations of TEL regime and partisan control of state government denoted in Equation (1). A TEL fiscal regime is defined when a state is operating under any type of tax and

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fail to satisfy the weak principle of transfers that permits the reallocation of income without an associated change in inequality (e.g., see Frank 2014). The Gini coefficient is further problematic since it is also non-decomposable, and thus subgroups in the population can experience an increase in inequality with the overall inequality measure showing a decrease (e.g., see Frank 2014).

<sup>7</sup> Adjusted real gross income (ARGI) based measures are preferable to *Current Population Survey* estimates from the U.S. Department of Labor that are known to underestimate incomes for affluent citizens in the top decile of the income distribution, especially those in the top 1% (Burkhauser, et al., 2012; see also, Berkowitz and Krause 2020: 311, Note 6).

<sup>8</sup> The upper decile of the income distribution is critical for analyzing income inequality since this is where income has surged the most according to prior studies (e.g., Atkinson and Piketty 2010; Piketty and Saez 2003; Sommelier and Price 2014).

expenditure limitation (e.g., revenue limit, expenditure limit, or a combination of revenue and expenditure limits) for a given year, and zero otherwise. The absence or existence of a TEL is derived from state statutes and constitutions (Kioko 2011; Rueben, Randall and Boddupalli 2018). U.S. partisan state government regimes are classified as follows: (1) divided party control in which no single party controls the governorship and enjoy partisan majorities in both legislative chambers; (2) unified Democratic party control is comprised of a Democrat governor and Democratic party majorities in both state legislative bodies; and (3) unified Republican party control of the governorship and Republican majority control of both legislative chambers.

Both the absolute and relative frequencies for each combination of policymaking mechanisms are displayed in **Figure 1**. Inspection of **Figure 1** from left to right shows that TEL restrictions are observed in 56.50% ( $N \times T = 969$ ) of the sample, while the remaining 43.50% ( $N \times T = 746$ ) of the state-year observations do not operate under TEL restrictions. A little more than half the sample observations occur under divided partisan control of state governors and legislatures (50.20%,  $N \times T = 861$ ), while unified Democratic and Republican control of state governments are roughly balanced by making up approximately a quarter of the sample, respectively (UDC: 23.27%,  $N \times T = 399$ ; URC: 26.53%,  $N \times T = 455$ ). The baseline treatment group consists of state-years where divided partisan control of governor and legislature operates under No TEL restrictions ( $N \times T = 380$ , 22.16% of sample observations). The additional treatment covariates that correspond to regression covariates are as follows: (1) divided partisan control subject to TEL restrictions ( $N \times T = 481$ , 28.05% of sample observations), (2) unified Democratic party control not subject to TEL restrictions ( $N = 173$ , 10.09% of sample observations), (3) unified Democratic party control subject to TEL restrictions ( $N \times T = 226$ ,

13.18% of sample observations), (4) unified Republican control not subject to TEL restrictions ( $N \times T = 193$ , 11.25% of observations), and (5) unified Republican control subject to TEL restrictions ( $N \times T = 262$ , 15.28% of sample observations).<sup>9</sup> These groups represent distinct combinations of fiscal rules and partisan governments that can shape state-level income inequality. Descriptive statistics for all variables broken down by these six treatment conditions, as well as the overall sample, are presented in **Table A2** appearing in the *Online Appendix* document.

To offer empirical leverage that distinguishes between rule-based and discretionary policymaking effects on income inequality in the American states, the estimating equation of interest can be expressed in generalized form:

$$Inequality_{it} = \alpha + \sum_{j=1}^2 \sum_{k=1}^3 \beta_{jk} (R_{it} \times D_{it}) + \pi_m X_{mit} + \delta_i S_i + \phi_t T_t + \varepsilon_{it}, \quad (4)$$

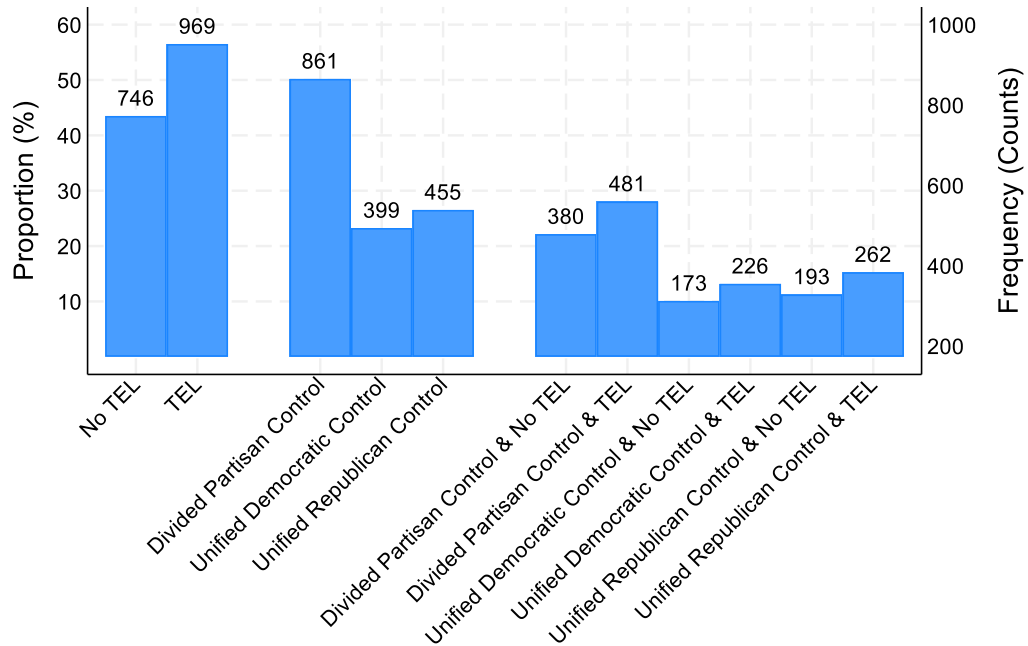
where income inequality is a linear function of the six combinations of fiscal rules,  $R_{it}$  (i.e., No TEL & TEL) and discretionary policymaking control over state political institutions,  $D_{it}$  (i.e., divided partisan control, unified Democratic control, and unified Republican control), an  $m$  vector of control covariates ( $X_m$ ), plus state ( $S_i$ ) and year ( $T_t$ ) unit effects, and a residual disturbance term ( $\varepsilon_{it}$ ). Robust standard error estimates are cluster-adjusted by state.

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<sup>9</sup> The breakdown of state-year observations for each of these six treatment groups appears in **Appendix Table 1** (*Breakdown of State-Year Observations and Descriptive Statistics for Various Rule–Discretion Combinations*) at the end of this manuscript document.



**Figure 1: Distribution of No TEL/TEL and Partisan Control in the American States, 1986 - 2020**



The vector of control covariates accounts for several variables posited to be correlated with income inequality. State economic policy liberalism is an annual measure accounting for a myriad of economic policies (e.g., regulation policies, licensing policies, labor policies, and income and sales tax policies) instituted by state governments for a given year (Caughey and Warshaw 2021). Although this measure is by no means exhaustive of how each state’s economic policies contribute to income inequality, it nonetheless provides information to which policies are adopted by those holding power within state governments. In addition, inflation-adjusted state real per capita income, state unemployment and poverty rates are also accounted as

control covariates in statistical models of income inequality<sup>10</sup>, as well as budget stabilization funds (i.e., rainy day funds), which can enhance state governments' fiscal capacity to attenuate income inequality since these funds are intended to mitigate against both revenue shortfalls and expenditure shocks (Douglas and Gaddie 2002; Hou 2003; Rosewicz, Maynard, and Fall 2020). Access to budget stabilization funds permits states to supplement the constraints of TELs with an added mechanism to gain revenues and reduce cuts in spending. This variable is measured as the rainy-day fund amount per capita denoted in the National Association of State Budget Officers' (NASBO) *Fall Fiscal Survey of the States*. Finally, a pair of fiscal instruments relating to austerity policies that might exacerbate income inequality are balanced budget requirements (BBRs) and a legislative supermajority voting to raise revenues or increase taxation rooted in either the state constitution or statutory law. The former measure is operationalized as a binary indicator where a state either lacks or has a strict BBR (see Hou and Smith 2006; Rueben, Randall, and Boddupalli 2018).<sup>11</sup> The legislative supermajority requirement binary indicator is operationalized similarly as equal to 1 when a state has such fiscal provisions, and 0 when they do not.

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<sup>10</sup> Data from the University of Kentucky Center for Poverty Research's national welfare dataset and Federal Reserve Bank of St. Louis FRED database, respectively.

<sup>11</sup> BBRs are classified as strict-BBRs if they include any one of the following rules: (1) the governor must sign a balanced budget; (2) no deficit is allowed to be carried over into the next fiscal year or biennium; and (3) the legislature must pass a balanced budget accompanied by either controls on supplementary appropriations or deficit spending (Kioko and Lofton 2021; Rueben, Randall, and Boddupalli 2018).

## Statistical Findings

### *Decomposition of TEL and Partisan Government Control Effects*

The regression estimates based on Equation (4) appear in **Table 2**. The baseline (omitted) policymaking regime group is given by  $T_{DPC|NoTEL}$ , and coefficient entries for both  $T_{UDC|TEL}$  and  $T_{URC|TEL}$  represent the total effect denoted by summing these partial (interaction) coefficients with their respective partisan government regime *No TEL* coefficients. In all but in a few instances, the regression coefficient estimates reveal that income inequality deviations in relation to the baseline policymaking regime of divided partisan control operating under an absence of a TEL ( $T_{DPC|NoTEL}$ ) are statistically trivial in terms of both magnitude and precision. The exceptions arise for the policymaking regime compatible with maximizing income inequality, unified Republican control under a TEL fiscal rule ( $T_{URC|TEL}$ ). In these instances, the income shares for the Top 10% and Top 1% of the income distribution within a given state yield the highest income inequality for this policymaking regime compared to divided partisan control state governments operating in absence of a TEL ( $T_{DPC|NoTEL}$ ). Inspection of state-year observations in these two policymaking conditions (see **Appendix Table 1**),  $T_{URC|TEL}$  and  $T_{DPC|NoTEL}$ , reveals that these income inequality differences are neither the result of obvious regional nor political distinctions.

**TABLE 2:**

**Evaluating Fiscal Rules and Partisan Control of Governments Effects on  
Income Inequality in the American States, 1986–2020**

<b>Treatment Covariates</b>	<b>Atkinson</b>	<b>Theil</b>	<b>Top 10%</b>	<b>Top 1%</b>
<b>Divided Partisan Control: TEL</b>	0.063	-0.321	-0.097	-0.252
[T <sub>DPC   TEL</sub> ]	(0.369)	(1.862)	(0.590)	(0.524)
<b>Unified Democratic Control: No TEL</b>	0.012	0.351	0.047	0.141
[T <sub>UDC   No TEL</sub> ]	(0.212)	(1.119)	(0.306)	(0.285)
<b>Unified Democratic Control: TEL</b>	-0.071	-0.228	-0.256	-0.049
[T <sub>UDC   TEL</sub> ]	(0.153)	(0.821)	(0.326)	(0.252)
<b>Unified Republican Control: No TEL</b>	0.288	1.949	0.508	0.243
[T <sub>URC   No TEL</sub> ]	(0.289)	(1.861)	(0.406)	(0.383)
<b>Unified Republican Control: TEL</b>	0.188	<b>1.495*</b>	<b>0.812***</b>	<b>0.437**</b>
[T <sub>URC   TEL</sub> ]	(0.199)	<b>(0.836)</b>	<b>(0.300)</b>	<b>(0.210)</b>
Controls	YES	YES	YES	YES
State & Year Unit Effects	YES	YES	YES	YES
AIC	4976.602	10,809.50	7026.062	6347.861
BIC	5227.172	11,060.07	7276.632	6598.431
Number of Observations (Panels)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)

**Notes:** Entries are regression coefficients, with *Unified Democratic Control: TEL & Unified Republican Control: TEL* representing the linear combination of these respective coefficients summed to their respective partisan regimes operating under No TEL. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Additional control covariates: *State Economic Policy Liberalism, State Real Per Capita Income, State Unemployment Rate, State Poverty Rate, State Rainy Day Fund Balances, Supermajority Tax Increase Requirements, and State Strong Balanced Restrictions.*

\* p ≤ 0.10

\*\* p ≤ 0.05

\*\*\* p ≤ 0.01.

The primary advantage of this decomposition approach is to obtain insight into isolating the distinct, independent effects of rules (TELS) and discretion (partisan government control) on income inequality that is not feasible in prior studies on this topic. The decomposition results analyzing distinct fiscal rule and partisan government control effects on income inequality appear in **Table 3**. To facilitate meaningful comparison of effect sizes across different income

inequality measures, standardized differential treatment effect estimates are computed as the percentage of the within-state standard deviation of each respective income inequality (or share) outcome variable [i.e., *estimated treatment effect differential / within-state SD for income inequality or share*)\*100)]. The top panel of **Table 3** reveals that decomposition of fiscal rule effects from these model estimates (*Between-TEL, Within-Partisan Government Regime*). These findings clearly indicate a lack of a statistically discernible TEL effect on income inequality in all 12 possible instances. The negative direction of these standardized differential treatment effect estimates is opposite of expectations that TELs contribute to income inequality, while most effect sizes are of a modest substantive nature (below 10%) compared to the within-state standard deviation of each income inequality measure. One can infer from these estimates that TELs fail to exert a statistically discernible impact on income inequality in the American states during an era where it was expanding.

Similarly, the *Between-Partisan Government, Within-TEL Regime* results appearing in the bottom panel of **Table 3** reveals similar null findings regarding state partisan government influence shaping income inequality in the American states with one notable exception — unified Republican partisan governments operating under a TEL have a 27.105% higher relative level of income share for those in the top decile (Top 10%) compared to unified Democratic governments constrained by a TEL. Unlike the *Between-TEL, Within-Partisan Government Regime* estimates that isolate the effects of TELs on income inequality while holding partisan government control fixed, both the sign and magnitude of these latter set of estimates are generally consistent with expectations that unified Republican (Democratic) state governments should use discretionary policy levers in a manner that increases (reduces) income

**TABLE 3:**

**Evaluating the Decomposition of Fiscal Rule and Partisan Control of Governments on Income Inequality in the American States, 1986–2020 (Table 2 Model Estimates)**

Treatment Covariates	Atkinson	Theil	Top 10%	Top 1%
<i><u>Between TEL–Within Partisan</u></i>				
<i><u>Government Regime</u></i>				
TEL – No TEL   DPC [ $T_{TEL-No\ TEL DPC}$ ]	2.107 (12.277)	-2.454 (14.213)	-2.516 (15.382)	-8.024 (16.703)
TEL – No TEL   UDC [ $T_{TEL-No\ TEL UDC}$ ]	-2.760 (8.739)	-4.504 (11.297)	-7.895 (11.226)	-6.619 (13.139)
TEL – No TEL   URC [ $T_{TEL-No\ TEL URC}$ ]	-4.014 (15.779)	-3.719 (18.628)	8.682 (15.818)	7.429 (18.838)
<i><u>Between Partisan Government–</u></i>				
<i><u>Within TEL Regime</u></i>				
DPC – UDC   No TEL [ $T_{DPC-UDC No\ TEL}$ ]	0.374 (6.830)	2.480 (8.406)	1.254 (8.115)	4.653 (9.418)
URC – UDC   No TEL [ $T_{URC-UDC No\ TEL}$ ]	8.921 (10.315)	11.286 (14.158)	12.225 (12.736)	3.389 (13.879)
URC – DPC   No TEL [ $T_{URC-DPC No\ TEL}$ ]	9.295 (9.331)	13.766 (13.149)	13.479 (10.780)	8.042 (12.651)
DPC – UDC   TEL [ $T_{DPC-UDC TEL}$ ]	4.809 (14.990)	-0.761 (17.200)	4.041 (17.189)	-6.877 (19.511)
URC – UDC   TEL [ $T_{URC-UDC TEL}$ ]	9.274 (8.036)	14.097 (9.237)	<b>27.105**</b> <b>(10.303)</b>	16.468 (11.134)
URC – DPC   TEL [ $T_{URC-DPC TEL}$ ]	4.467 (16.626)	14.858 (17.243)	23.065 (16.827)	15.096 (23.952)

**Notes:** Entries are standardized differential treatment effect estimates (percentage terms) based on each respective income inequality outcome measure’s within-state standard deviation. *Divided Partisan Control:* *No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Additional control covariates: *State Economic Policy Liberalism, State Real Per Capita Income, State Unemployment Rate, State Poverty Rate, State Rainy Day Fund Balances, Supermajority Tax Increase Requirements, and State Strong Balanced Restrictions.*

\*  $p \leq 0.10$

\*\*  $p \leq 0.05$

\*\*\*  $p \leq 0.01.$

inequality, with divided partisan governments falling somewhere between these poles. Unified Republican partisan government regimes are responsible for the largest magnitude partisan effects, especially in the presence of a TEL. Clearly, the decomposition of rule and discretionary policymaking mechanisms offer much less sanguine empirical evidence compared to prior studies that uncover both strong and consistent statistical findings that TELs or partisan governments play a vital role in contributing to income inequality in the American states.

### *Summary of Sensitivity Analyses*

In the *Online Appendix* document, several sensitivity checks are performed based upon the analyses conducted in this manuscript. One set of sensitivity checks conducted analyzes whether model specification choices involving covariates beyond the policymaking (treatment) condition variables affect the substantive results based on an unrestricted model specification containing all control covariates noted in the text and bottom notes of **Table 2. Appendix B** reports the regression model estimates (**Table B1**), as well as the corresponding standardized differential treatment effect estimates (**Table B2**) for model specifications excluding all control covariates except for state and year unit effects (*fully restricted models*), as well as *partially restricted models* which augment the fully restricted models by incorporating a pair of statistically significant control covariate predictors observed in the unrestricted model specifications reported in **Tables 2** and **3** (i.e., state per capita real income and state rainy day fund balances). The results from these sensitivity checks are similar compared to those based on the unrestricted model specification – especially those based on the partially restricted model specification. These decomposition estimates for both the full and partially restricted model

specifications yield rather similar findings as those based on the unrestricted model specifications reported in the manuscript. Simply, fiscal rules do not exert a distinct effect on income inequality, holding partisan government control constant. Out of a possible 48 instances of partisan government influence over income inequality, only in two specific instances are partisan government effects observed – in both instances, when evaluating the difference between unified Republican and unified Democratic governments operating under a TEL fiscal regime ( $T_{URC-UDC|TEL}$ ).<sup>12</sup>

**Appendix C** evaluates the potential biasing effects from endogenous fiscal rule changes by omitting 12 state panels where fiscal rules change at least once during the 1986-2020 sample period. This analysis comprises a reduced panel of 37 states covering 35 years (1,295 observations) that represents omitting 24.49% of the full sample of observations (1,715 observations). The aim of this exercise is to evaluate how sensitive the statistical findings are to the omission of these panels. Since this analysis is premised on a sub-sample of observations, analysis is conducted on both the fully restricted and unrestricted model specifications noted above to address sensitivity in model estimates arising from model specification on this distinct sample of observations. Although these joint policymaking condition estimates yield similar substantive findings to those presented in **Table 2** (cf. **Table C1**), the effects of TELs under a divided partisan control regimes ( $T_{DPC|TEL}$ ) are positively associated with income inequality

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<sup>12</sup> These exceptional cases are for the Theil income inequality index and Top 10% income share based on a partially restricted model specification.



when excluding 12 state panels that alter their fiscal rules during the sample period.<sup>13</sup> These effects are manifested in several decomposition estimates evaluating both rule and discretionary policymaking effects involving divided partisan governments. As noted earlier, it is plausible that TEL regimes might exert greater policy effects when discretionary policymaking authority is fragmented between political parties controlling state governments. The general pattern of estimates suggests that omission of state panels with fiscal rule changes overstate the effect of TELs on income inequality under divided partisan control (see Top Panel, **Table B2**). In addition, omitting these cases also exaggerates the influence of partisan governments on income inequality, especially under TEL fiscal regimes compared to No TEL regimes.<sup>14</sup> Perhaps these findings represent statistical artifacts since in every instance these fiscal rule changes resulted in a transition from an absence of a TEL to adopting this fiscal rule, with only two instances reverting back to No TEL after a limited experiment with this fiscal rule (Illinois in 2012 and Wisconsin in 2016).

**Appendix D** evaluates alternative income inequality measures to those analyzed in this study. The alternative income inequality index measures, Gini Coefficient and Relative Mean

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<sup>13</sup> These 12 states include Connecticut (1991), Florida (1994), Illinois (2012 & 2016), Indiana (2003), Iowa (1993), Maine (2005), New Jersey (1992), North Carolina (1991), Ohio (2006), Rhode Island (1992), Utah (1989), and Wisconsin (2001 & 2012).

<sup>14</sup> For No TEL regimes, the two instances of partisan government effects are more numerically modest and estimated with less precision ( $p \leq 0.10$ ) compared to six instances of strong and statistically significant partisan government effects on income inequality under TEL regimes.

Deviation, are ones that have inferior properties relating to accurate measurement of the unequal distribution of income (see *Note 6*). The alternative income shares measures capture the super-wealthy highest income fractile groups (Top 0.1% and Top 0.01%) publicly available for our panel design analyzing the American states. We anticipate that the latter pair of income share measures will be more prone to detect government policymaking effects since the super-wealthy have benefitted the most from rising income inequality during the past several decades (e.g., Atkinson and Piketty 2010; Piketty and Saez 2003; Sommelier and Price 2014). These joint policymaking condition covariates yield similar substantive findings to those presented in **Table 2** (cf. **Table D1**). These alternative set of decomposition estimates appearing in **Table D2** are substantively identical insofar that there is only a single instance where these standardized differential treatment effect estimates are statistically discernible – comparing unified Republican partisan control relative to unified Democratic partisan control while operating under a TEL regime ( $T_{URC-UDC|TEL}$ ). However, this lone significant partisan government effect is observed for a summary-based income inequality measure (*Relative Mean Deviation*), and not income shares for affluent citizens as presented in **Table 3**.

**Appendix E** replicates the analyses reported in this manuscript, except disaggregates TELs by type. In the first set of analyses appearing in **Tables E1** and **E2**, TELs are distinguished between those that do not require a legislative supermajority override provision (*Non-LSMOP TEL*) from those that do face such a requirement (*LSMOP TEL*). It is possible that ‘sturdier’ TELs with an LSMOP requirement yield greater effects on income inequality compared to those TELs which do not impose this barrier to relax this fiscal rule. In addition, a complementary set of sensitivity analyses appearing in **Tables E1** and **E2** focuses on the TEL “source” by

distinguishing between Expenditure Only TELs from “Other” TELs which are comprised of states with a TEL whose source are as follows: revenue, expenditure and revenue, or appropriation. It is possible that different TEL sources might yield heterogenous fiscal rule effects. The statistical evidence from this pair of sensitivity checks seeking to distinguish between alternative TEL types is generally consistent with the reported results, with a few notable exceptions. These sensitivity checks provide substantively similar estimated compared to those reported in the manuscript based on (1) differences between unified Republican control regime operating under a TEL ( $T_{URC|TEL}$ ) and divided partisan control in the absence of a TEL ( $T_{DPC|NoTEL}$ ) mainly restricted to affluent citizens’ income shares, and (2) statistical null findings regarding TEL effects under these alternative TEL regimes.<sup>15</sup> Although there are six instances out of a possible 72 where partisan government effects on income inequality are observed, these occurrences are primarily linked to whether or not a state TEL has a legislative supermajority override provision (five such instances). In these exceptional instances, LSMOP TELs tend to have somewhat larger partisan effects on income inequality for both unified Republican and divided partisan governments (see Table E1). Nonetheless, the evidence from these sensitivity checks reveals rather limited evidence of tangible partisan differences involving income inequality between unified Republican partisan control states and unified Democratic control states when evaluating the concentration of income held by affluent citizens in the top decile and percentile of the income distribution across the American states.

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<sup>15</sup> In only two instances is a statistically nontrivial *Between-TEL—Within-Partisan Regime* effect on income inequality observed among the possible 72 hypothesis tests (see first page of **Table E2**).

## Discussion

Disentangling the consequences of different policymaking mechanisms requires isolating the effect of each policy mechanism's contribution to policy outcomes. This is especially critical for many forms of government policymaking that is a product of legally-sanctioned activities of elected officials involving the exercise of government authority (*discretion*), while operating under either the absence or existence of legal-based constraints (*rules*). That is, rules and discretion often operate in conjunction with one another in the exercise of policymaking authority by governments. Separating out these distinct policymaking effects permits valid leverage regarding the extent that rules versus discretion shape policy outcomes.

This study has advanced a simple decomposition analytical strategy for the empirical evaluation of the distinct impact for each of these policymaking mechanisms on policy outcomes. In the present study, these policymaking mechanisms are tax and expenditure limitations (TEs) and partisan control of governments, while the policy outcomes are represented by income inequality in the American states. TEs constitute a rule-based policymaking mechanism that institutes fiscal constraints intended to exacerbate income inequality that disproportionately benefits affluent citizens at the expense of non-affluent citizens. Partisan governments enjoy discretionary policymaking powers that enable them to utilize various levers at their disposal to apportion more favorable outcomes to preferred constituency groups at the expense of opposition constituency groups.

Although many studies highlight the importance of either partisan governments or TEs in predicting income inequality in the American states (e.g., Deller, et al. 2021; Franko and Witko 2018; Kelly 2009; Kelly and Witko 2012), these studies are unable to isolate the

contribution of these distinct policy mechanisms in shaping income inequality since they do not offer a comparative-static analysis of each policymaking mechanism's impact on income inequality. These studies are susceptible to yielding biased estimates of governmental effects on income inequality, while also prone to observational equivalence critiques involving both TEL and partisan government regime policymaking mechanisms. Existing research designs cannot distinguish how income inequality is affected by TELs versus discretionary policymaking authority exercised by democratic institutions.

This study suggests that elected officials' influence over downstream policy outcomes in single-party dominant 'deep Red' Republican or 'deep blue' Democratic states might be substantially overstated, including when fiscal opportunity is aligned with political willingness — i.e., fiscal rules are aligned with the policy preferences of these partisan governments. With few exceptions, this study's evidence generally reveals that income inequality is unaffected by either rule-based or discretionary policymaking, thus underscoring the limited capacity of fiscal rules and partisan governments to influence income inequality within the American states. In most instances where such income inequality effects are observed, they center on policy compatibility conditions where unified Republican state governments operate under a TEL. Although unified Republican state governments can affect the income distribution through shifting the allocation of tax incentive or expenditure allocations (e.g., tax expenditures), a lack

of a TEL restriction might mitigate the consequences of this partisan regime's discretionary policymaking efforts since fiscal tradeoffs are less acute.<sup>16</sup>

Our hope is that future research analyzing how policymaking mechanisms influence policy outcomes will seriously consider the joint context by which rules and discretion operate, as well as make further advances into disentangling such effects of these policymaking mechanisms, when conducting policy evaluation.

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<sup>16</sup> Evidence involving income inequality effects arising from a unified Republican government lacking a TEL is all but non-existent (but see **Tables C1 and C2** [Top 10%: PR model] for an isolated exception).

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**APPENDIX TABLE 1**

**Breakdown of State-Year Observations and Descriptive Statistics  
for Various Rule–Discretion Combinations**

<b>DPC: No TEL</b>	<b>UDC: No TEL</b>	<b>URC: NO TEL</b>	<b>DPC: TEL</b>	<b>UDC: TEL</b>	<b>URC: TEL</b>
Alabama (T=19)	Alabama (T=6)	Alabama (T=10)	Alaska (T=25)	California (T=15)	Alaska (T=10)
Arkansas (T= 12)	Arkansas (T= 17)	Arkansas (T= 6)	Arizona (T=14)	Colorado (T=8)	Arizona (T=21)
Connecticut (T= 1)	Connecticut (T= 4)	Georgia (T=16)	California (T=20)	Connecticut (T=8)	Colorado (T=4)
Florida (T= 5)	Florida (T=3)	Illinois (T=4)	Colorado (T=23)	Delaware (T=11)	Florida (T=22)
Georgia (T =2)	Georgia (T=17)	Indiana (T=3)	Connecticut (T=22)	Hawaii (T=27)	Idaho (T=26)
Illinois (T= 18)	Illinois (T=8)	Kansas (T= 20)	Delaware (T=24)	Illinois (T=3)	Indiana (T=11)
Indiana (T=14)	Kentucky (T=13)	Kentucky (T=3)	Florida (T=5)	Iowa (T=4)	Iowa (T=5)
Iowa (T=7)	Maine (T=3)	New Hampshire (T=15)	Hawaii (T=8)	Louisiana (T=14)	Louisiana (T=6)
Kansas (T=15)	Maryland (T=25)	North Dakota (T=26)	Idaho (T=9)	Maine (T=8)	Maine (T=2)
Kentucky (T=19)	Minnesota (T=6)	Ohio (T=11)	Illinois (T=1)	Massachusetts (T=13)	Michigan (T=14)
Maine (T=16)	New Hampshire (T=4)	Pennsylvania (T=11)	Indiana (T=7)	Mississippi (T=9)	Mississippi (T=9)
Maryland (T= 10)	New Jersey (T=1)	South Dakota (T=33)	Iowa (T=18)	Missouri (T=8)	Missouri (T=8)
Minnesota (T=29)	New Mexico (T=14)	Utah (T=3)	Louisiana (T=15)	Nevada (T=4)	Montana (T=10)
New Hampshire (T=16)	New York (T=7)	West Virginia (T=4)	Maine (T=6)	New Jersey (T=9)	Nevada (T=2)
New Jersey (T=5)	Rhode Island (T=1)	Wisconsin (T=9)	Massachusetts (T=22)	North Carolina (T=14)	New Jersey (T=7)
New Mexico (T=21)	Vermont (T=12)	Wyoming (T=18)	Michigan (T=21)	Oklahoma (T=7)	North Carolina (T=4)
New York (T=28)	Virginia (T=9)		Mississippi (T=16)	Oregon (T=17)	Ohio (T=11)
North Carolina (T=5)	West Virginia (T=22)		Missouri (T=19)	Rhode Island (T=10)	Oklahoma (T=10)
North Dakota (T=9)	Wisconsin (T=1)		Montana (T=25)	South Carolina (T=1)	South Carolina (T=18)
Ohio (T=9)			Nevada (T=29)	Tennessee (T=10)	Tennessee (T=10)
Pennsylvania (T=24)			New Jersey (T=13)	Texas (T=5)	Texas (T=18)
Rhode Island (T=5)			North Carolina (T=12)	Washington (T=18)	Utah (T=32)
South Dakota (T= 2)			Ohio (T=4)	Wisconsin (T=2)	Wisconsin (T=1)
Vermont (T=23)			Oklahoma (T=18)		
Virginia (T=25)			Oregon (T=18)		
West Virginia (T=9)			Rhode Island (T=19)		
Wisconsin (T=14)			South Carolina (T=16)		
Wyoming (T= 17)			Tennessee (T=15)		
			Texas (T=12)		
			Washington (T=17)		
			Wisconsin (T=8)		
<i>N×T = 380</i>	<i>N×T = 173</i>	<i>N×T = 193</i>	<i>N×T = 481</i>	<i>N×T = 226</i>	<i>N×T = 262</i>

## **ONLINE APPENDIX**

# **Fiscal Opportunity Coupled with Political Willingness?**

## **Unpacking the Effects of TELs and Partisan Governments on Income Inequality in the American States, 1986–2020**

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1. **APPENDIX A: Listing of State TEL Characteristics for Sample of Observations; Descriptive Statistics**
2. **APPENDIX B: Sensitivity Check, 1: Evaluating Sensitivity of Model Estimates Due to Model Specification – Fully and Partially Restricted Model Specifications**
3. **APPENDIX C: Sensitivity Check, 2: Evaluating the Consequences of Omitting States with Changing Fiscal Rules – Comparing Full Panel Estimates (N = 49) to Panel Estimates Omitting Potentially Endogenous Fiscal Rule Changes (N = 37)**
4. **APPENDIX D: Sensitivity Check, 3: Comparison to Alternative Income Inequality Measures: Indices Possessing Inferior Properties (Gini & Relative Mean Deviation) & Income Shares for Super-Wealthy Citizens (Top 0.01% & Top 0.001%)**
5. **APPENDIX E: Sensitivity Check, 4: Comparison to Alternative TEL Measures Delineating Between TELs Lacking/Possessing Legislative Supermajority Override Requirements; and Between Expenditure Only TELs & Other Forms of TELs.**



## APPENDIX A

### Listing of State TEL Characteristics for Sample of Observations & Descriptive Statistics

TABLE A1

#### State Government Tax and Expenditure Limitation (TEL) Characteristics and Years Observed

State Name	TEL Indication (Type of TEL)	Years of Observation of a TEL	Years of TEL Changes	TELS with Override Provisions	TELS with Supermajority Override Provisions
Alabama	No TEL	—	—	—	—
Alaska	1982 (Exp.)	1986–2020	None	Y	Y
Arizona	1978 (Exp.)	1986–2020	None	Y	Y
Arkansas	No TEL	—	—	—	—
California	1979 (Exp.)	1986–2020	None	Y	Y
Colorado	1977 (Exp.) 1992 (Rev.)	1986–2020	None	Y	Y
Connecticut	1991 (Exp.)	1991–2020	1991	Y	Y
Delaware	1980 (App.)	1986–2020	None	Y	Y
Florida	1994 (Rev.)	1994–2020	1994	Y	Y
Georgia	No TEL	—	—	—	—
Hawaii	1978 (Exp.)	1986–2020	None	Y	Y
Idaho	1980 (Exp.)	1986–2020	None	N	N
Illinois <sup>1</sup>	2012–2016 (Exp.)	2012–2016	2012 & 2016	N	N
Indiana	2003 (Exp.)	2003–2020	2003	Y	N
Iowa	1993 (App.)	1993–2020	1993	N	N
Kansas	No TEL	—	—	—	—
Kentucky	No TEL	—	—	—	—
Louisiana	1979–2001 (Rev.) 1993 (Exp.)	1986–2020	None	Y (after 1993)	Y (after 1993)
Maine	2005 (App.)	2005–2020	2005	Y	N
Maryland	No TEL	—	—	—	—
Massachusetts	1986 (Rev.)	1986–2020	None	N	N
Michigan	1978 (Rev.)	1986–2020	None	Y	Y
Minnesota	No TEL	—	—	—	—
Mississippi	1982 (App.)	1986–2020	None	N	N
Missouri	1980 (Rev.)	1986–2020	None	Y	Y

Montana	1981 (Exp.)	1986–2020	None	Y	Y
Nebraska <sup>2</sup>	No TEL	—	—	—	—
Nevada	1979 (Exp.)	1986–2020	None	N	N
New Hampshire	No TEL	—	—	—	—
New Jersey	1992 (Exp.)	1992–2020	1992	Y	Y
New Mexico	No TEL	—	—	—	—
New York	No TEL	—	—	—	—
North Carolina	1991 (Exp.)	1991–2020	1991	N	N
North Dakota	No TEL	—	—	—	—
Ohio	2006 (Exp.)	2006–2020	2006	N	N
Oklahoma	1985 (App.)	1986–2020	None	Y	N
Oregon	1979 (Exp.)	1986–2020	None	Y	Y
Pennsylvania	No TEL	—	—	—	—
Rhode Island	1992 (App.)	1986–2020	None	Y	N
South Carolina	1980 (Exp.)	1986–2020	None	Y	Y
South Dakota	No TEL	—	—	—	—
Tennessee	1978 (Exp.)	1986–2020	None	Y	N
Texas	1978 (Exp.)	1986–2020	None	Y	N
Utah	1989 (Exp.)	1986–2020	1989	Y	Y
Vermont	No TEL	—	—	—	—
Virginia	No TEL	—	—	—	—
Washington	1979 (Rev.) 1993–1995 (Exp.) 2007 (Exp.)	1986–2020	None	Y (after 1995)	Y (after 1995)
West Virginia	No TEL	—	—	—	—
Wisconsin	2001–2011 (Exp.)	2001–2011	2001 & 2012	—	—
Wyoming	No TEL	—	—	—	—

**Notes:** TEL indication years are those that the TEL was enacted and match the fiscal year in which the statute of constitutional provision would be impactful. Types of TELs are indicated as Rev. for a Revenue only TEL, Exp. for an Expenditure only TEL, and App. for an Appropriations TEL. For TELs with override provisions features, Y is indicated as Yes if the provision is part of the TEL statute or constitutional provision and N is indicated as No if there is not override provision feature. <sup>1</sup> Illinois passed the Public Act 96-1496 (35 ILCS 5/201.5 new) that indicated a spending limitation and tax reduction for the limited time of fiscal year 2012 and continuing through fiscal year 2015. <sup>2</sup> Nebraska does not have a TEL and has been excluded due to lack of partisan elections of legislators.

**TABLE A2****Descriptive Statistics for Variables Reported in Manuscript***(Based on Full Sample of States [N = 49 States × 35 Years = 1,715 State-Year Observations])*

<b>Outcome Covariate</b>	<b>Overall Sample</b>	<b>DPC: No TEL</b>	<b>DPC: TEL</b>	<b>UDC: No TEL</b>	<b>UDC: TEL</b>	<b>URC: No TEL</b>	<b>URC: TEL</b>
<b>Atkinson Index</b>	26.705 (4.022)	25.965 (4.086)	26.889 (3.975)	25.320 (3.967)	27.107 (4.551)	26.865 (3.770)	27.889 (3.306)
<b>Theil Index</b>	76.789 (20.164)	73.433 (20.026)	77.616 (19.983)	70.346 (19.484)	78.435 (21.894)	78.469 (20.609)	81.734 (17.421)
<b>Top 10% Income Share</b>	42.750 (5.569)	41.774 (5.000)	42.739 (5.787)	42.016 (4.602)	43.201 (6.052)	41.823 (5.036)	44.961 (5.833)
<b>Top 1% Income Share</b>	16.273 (4.605)	15.713 (4.461)	16.472 (4.910)	15.091 (4.124)	16.462 (4.838)	16.291 (4.133)	17.328 (4.411)
<b>State Economic Policy Liberalism</b>	0.002 (1.114)	-0.271 (1.058)	-0.186 (1.058)	-0.206 (1.045)	-0.675 (1.264)	0.847 (0.691)	0.842 (0.798)
<b>State Real Per Capita Income</b>	43,096.90 (9,364.83)	42,103.09 (9,430.35)	43,170.77 (9,122.64)	40,416.58 (9,883.29)	45,742.44 (11,884.14)	43,989.63 (8,245.28)	43,232.86 (6,687.72)
<b>State Unemployment Rate</b>	5.527 (1.901)	5.261 (1.649)	5.842 (1.968)	5.793 (1.792)	5.928 (2.071)	4.546 (1.621)	5.537 (1.933)
<b>State Poverty Rate</b>	12.662 (3.651)	12.279 (3.824)	12.562 (3.255)	13.621 (4.247)	12.887 (4.186)	11.803 (2.878)	13.205 (3.468)
<b>State Rainy Day Fund Balance</b>	0.061 (0.177)	0.034 (0.059)	0.079 (0.256)	0.037 (0.052)	0.030 (0.035)	0.092 (0.184)	0.089 (0.217)
<b>Supermajority Requirement To Raise Revenues</b>	0.258 (0.438)	0.097 (0.297)	0.358 (0.480)	0.116 (0.321)	0.425 (0.495)	0.207 (0.406)	0.298 (0.458)
<b>Strong Balanced Budget Restrictions</b>	0.688 (0.463)	0.392 (0.489)	0.805 (0.397)	0.682 (0.467)	0.788 (0.410)	0.637 (0.482)	0.859 (0.349)
Number of Observations	1,715	380	481	173	226	193	262
(Percentage of Overall Sample)	(100.00)	(22.16)	(28.05)	(10.09)	(13.18)	(11.25)	(15.28)

**Notes:** Top (Parenthetical) entries are mean (standard deviation) values for *Income Inequality* measures and *Control Covariates* [excluding state and year unit effects]. Both frequency counts and percentages of each *Rules-Discretion Policymaking Context* are listed at the bottom of **Table A2**.

## **APPENDIX B**

### **Sensitivity Check, 1: Evaluating Sensitivity of Model Estimates Due to Model Specification – Fully and Partially Restricted Model Specifications**

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**TABLE B1**

**Evaluating Fiscal Rules and Partisan Control of Governments Effects on Income Inequality in the American States, 1986–2020**  
*(Sensitivity Check, 1: Fully & Partially Restricted Model Specifications)*

Treatment Covariate	Atkinson (FR)	Atkinson (PR)	Theil (FR)	Theil (PR)	Top 10% (FR)	Top 10% (PR)	Top 1% (FR)	Top 1% (PR)
<b>Divided Partisan Control: TEL</b>	-0.032 (0.462)	0.130 (0.361)	-1.619 (2.220)	-0.691 (1.808)	-0.057 (0.600)	-0.004 (0.578)	-0.396 (0.608)	-0.200 (0.521)
<b>Unified Democratic Control: No TEL</b>	0.143 (0.284)	-0.012 (0.218)	1.050 (1.429)	0.182 (1.084)	0.097 (0.305)	0.043 (0.297)	0.282 (0.342)	0.100 (0.276)
<b>Unified Democratic Control: TEL</b>	-0.040 (0.222)	-0.087 (0.153)	-0.466 (1.178)	-0.708 (0.797)	-0.174 (0.333)	-0.197 (0.323)	-0.042 (0.299)	-0.089 (0.248)
<b>Unified Republican Control: No TEL</b>	0.147 (0.326)	0.310 (0.321)	1.742 (2.197)	2.565 (2.079)	0.337 (0.402)	0.423 (0.443)	0.145 (0.447)	0.301 (0.444)
<b>Unified Republican Control: TEL</b>	-0.221 (0.269)	0.219 (0.243)	-0.125 (1.256)	<b>2.255**</b> <b>(1.023)</b>	0.555 (0.348)	<b>0.739**</b> <b>(0.333)</b>	0.024 (0.306)	<b>0.505*</b> <b>(0.257)</b>
Controls	NO	Partial	NO	Partial	NO	Partial	NO	Partial
State & Year Unit Effects	YES	YES	YES	YES	YES	YES	YES	YES
AIC	5,546.930	4,982.631	11,371.570	10,834.010	7062.694	<b>7025.559</b>	6666.804	6350.500
BIC	5,759.370	<b>5,205.964</b>	11,584.010	<b>11,057.350</b>	7275.134	<b>7248.892</b>	6879.244	<b>6573.834</b>
Number of Observations (Panels)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)

**Notes:** Entries are regression coefficients, with *Unified Democratic Control: TEL* & *Unified Republican Control: TEL* representing the linear combination of these respective coefficients summed to their respective partisan regimes operating under No TEL. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Fully Restricted (FR) model specification only contains treatment covariates, plus state and year unit effects. Control Covariates in Partial Restricted (PR) Model Specification: *State Real Per Capita Income* & *State Rainy Day Fund Balances*. **Red boldface (regular)** entries indicate alternative models produce **noticeably (marginally)** better model fit than corresponding reported model in **Table 2**.

\* p ≤ 0.10

\*\* p ≤ 0.05

\*\*\* p ≤ 0.01.

**TABLE B2**

Evaluating the Decomposition of Fiscal Rule and Partisan Control of Governments on Income Inequality in the American States, 1986–2020  
*(Sensitivity Check, 1: Fully & Partially Restricted Model Specifications — Table B1 Model Estimates)*

Treatment Covariate	Atkinson (FR)	Atkinson (PR)	Theil (FR)	Theil (PR)	Top 10% (FR)	Top 10% (PR)	Top 1% (FR)	Top 1% (PR)
<i><u>Between TEL–Within Partisan Government Regime</u></i>								
TEL – No TEL   DPC	-1.063 (15.360)	4.337 (11.991)	-12.359 (16.949)	-6.913 (10.141)	-1.491 (15.649)	-0.112 (15.069)	-12.633 (19.406)	-6.586 (12.635)
TEL – No TEL   UDC	-6.106 (12.416)	-2.520 (8.865)	-11.784 (14.719)	-5.277 (13.805)	-7.056 (11.786)	-6.253 (11.172)	-11.305 (16.248)	-6.365 (16.623)
TEL – No TEL   URC	-14.760 (17.714)	-3.652 (15.921)	-15.296 (22.201)	-2.542 (18.698)	-6.224 (15.178)	9.028 (15.470)	-4.649 (21.694)	7.837 (18.760)
<i><u>Between Partisan Government– Within TEL Regime</u></i>								
DPC – UDC   No TEL	4.597 (9.159)	-0.379 (7.047)	7.419 (10.096)	1.284 (7.655)	2.575 (8.100)	1.140 (7.890)	9.317 (11.323)	3.309 (9.135)
URC – UDC   No TEL	0.141 (12.172)	10.387 (11.729)	4.888 (16.324)	16.838 (15.601)	6.376 (12.417)	10.081 (13.458)	-4.516 (16.217)	6.629 (16.318)
URC – DPC   No TEL	4.738 (10.523)	10.007 (10.363)	12.307 (15.518)	18.122 (14.685)	8.951 (10.653)	11.220 (11.743)	4.801 (14.769)	9.937 (14.679)
DPC – UDC   TEL	0.290 (18.858)	7.790 (14.531)	-9.433 (21.911)	0.134 (17.326)	2.960 (18.624)	4.893 (18.100)	-12.011 (23.695)	-3.766 (20.106)
URC – UDC   TEL	-6.491 (12.415)	10.969 (10.168)	2.788 (13.950)	<b>24.237**</b> <b>(10.698)</b>	18.508 (11.293)	<b>23.760**</b> <b>(11.333)</b>	2.239 (14.974)	20.119 (12.826)
URC – DPC   TEL	-6.781 (21.145)	3.179 (16.322)	12.221 (21.577)	24.104 (15.836)	15.548 (16.124)	18.867 (15.044)	14.251 (22.248)	23.866 (17.270)

**Notes:** Entries are standardized differential treatment effect estimates (percentage terms) based on each respective income inequality measure’s within-state standard deviation. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Fully Restricted (FR) model specification only contains treatment covariates, plus state and year unit effects. Control Covariates in Partially Restricted (PR) Model Specification: *State Real Per Capita Income & State Rainy Day Fund Balances*.

\* p ≤ 0.10

\*\* p ≤ 0.05

\*\*\* p ≤ 0.01.

## APPENDIX C

**Sensitivity Check, 2: Evaluating the Consequences of Omitting States with Changing Fiscal Rules – Comparing Full Panel Estimates (N = 49) to Panel Estimates Omitting Potentially Endogenous Fiscal Rule Changes (N = 37)**

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**TABLE C1**

**Evaluating Fiscal Rules and Partisan Control of Governments Effects on Income Inequality in the American States, 1986–2020**  
*(Sensitivity Check, 2: Omitting TEL Rule Change States)*

Treatment Covariates	Atkinson (FR)	Atkinson (UR)	Theil (FR)	Theil (UR)	Top 10% (FR)	Top 10% (UR)	Top 1% (FR)	Top 1% (UR)
<b>Divided Partisan Control: TEL</b>	<b>1.989**</b> (0.214)	-1.607 (1.012)	<b>13.187***</b> (1.245)	-6.678 (5.420)	0.417 (0.269)	-1.498 (1.668)	<b>2.502***</b> (0.282)	-1.738 (1.442)
<b>Unified Democratic Control: No TEL</b>	0.388 (0.315)	0.152 (0.229)	2.562 (1.624)	1.310 (1.304)	0.462 (0.299)	0.396 (0.315)	<b>0.672*</b> (0.364)	0.426 (0.296)
<b>Unified Democratic Control: TEL</b>	-0.109 (0.296)	-0.047 (0.199)	-0.892 (1.592)	-0.186 (1.089)	0.037 (0.435)	-0.054 (0.426)	0.021 (0.402)	0.084 (0.323)
<b>Unified Republican Control: No TEL</b>	0.359 (0.413)	0.493 (0.368)	3.351 (2.735)	3.514 (2.352)	0.642 (0.492)	<b>0.876*</b> (0.467)	0.421 (0.566)	0.525 (0.470)
<b>Unified Republican Control: TEL</b>	-0.365 (0.335)	-38.443 (35.537)	-1.039 (1.523)	0.804 (1.020)	0.390 (0.387)	<b>0.664*</b> (0.361)	-0.189 (0.333)	0.268 (0.238)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
State & Year Unit Effects	YES	YES	YES	YES	YES	YES	YES	YES
AIC	4,254.359	3,826.839	8,662.090	8,215.723	5,341.797	5,307.053	5,015.695	4,754.394
BIC	4,440.345	4,012.824	8,848.076	8,401.709	5,527.782	5,493.038	5,201.681	4,940.380
Number of Observations (Panels)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)

**Notes:** N = 37 state panels with fixed fiscal rules (1986–2020). Entries are regression coefficients, with *Unified Democratic Control: TEL* & *Unified Republican Control: TEL* representing the linear combination of these respective coefficients summed to their respective partisan regimes operating under No TEL. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Fully Restricted (FR) model specification only contains treatment covariates, plus state and year unit effects. Unrestricted (UR) Model Specification Control Covariates: *State Economic Policy Liberalism, State Real Per Capita Income, State Unemployment Rate, State Poverty Rate, State Rainy Day Fund Balances, Supermajority Tax Increase Requirements, and State Strong Balanced Restrictions.*

\*  $p \leq 0.10$

\*\*  $p \leq 0.05$

\*\*\*  $p \leq 0.01$ .



**TABLE C2**

Evaluating the Decomposition of Fiscal Rule and Partisan Control of Governments on Income Inequality in the American States, 1986–2020  
(Sensitivity Check, 2: Omitting TEL Rule Change States — Table C1 Model Estimates)

Treatment Covariates	Atkinson (FR)	Atkinson (UR)	Theil (FR)	Theil (UR)	Top 10% (FR)	Top 10% (UR)	Top 1% (FR)	Top 1% (UR)
<i>Between TEL–Within Partisan</i>								
<i>Government Regime</i>								
TEL – No TEL   DPC	<b>65.262***</b> (7.015)	-52.725 (33.202)	<b>97.044***</b> (9.165)	-49.144 (39.886)	10.634 (6.863)	-38.211 (42.546)	<b>-65.227***</b> (7.361)	-45.305 (37.590)
TEL – No TEL   UDC	-17.365 (14.671)	-6.940 (10.312)	27.593 (17.592)	-11.954 (13.291)	-11.221 (13.985)	-11.906 (13.455)	-16.972 (13.870)	-8.899 (11.155)
TEL – No TEL   URC	-29.663 (23.568)	-18.241 (21.320)	-36.618 (28.909)	-22.605 (24.588)	-7.619 (19.638)	-6.398 (20.473)	-17.457 (20.733)	-7.344 (17.901)
<i>Between Partisan Government– Within TEL Regime</i>								
DPC – UDC   No TEL	12.755 (10.359)	4.993 (7.525)	18.209 (11.541)	9.310 (9.266)	12.415 (8.047)	10.643 (8.486)	<b>17.829*</b> (9.663)	11.298 (7.850)
URC – UDC   No TEL	-0.970 (14.471)	11.193 (12.123)	5.606 (19.338)	15.664 (16.718)	4.860 (14.148)	12.922 (13.620)	-6.653 (14.639)	2.618 (11.932)
URC – DPC   No TEL	11.785 (13.564)	16.185 (12.085)	23.814 (19.435)	24.974 (16.717)	17.275 (13.244)	<b>23.565*</b> (12.571)	11.177 (15.007)	13.916 (12.466)
DPC – UDC   TEL	<b>77.599***</b> (16.716)	-54.728 (35.379)	<b>111.230***</b> (20.619)	-51.287 (43.186)	9.406 (16.953)	-35.786 (42.200)	<b>63.009***</b> (16.211)	-46.281 (37.961)
URC – UDC   TEL	-8.964 (15.355)	3.319 (10.399)	-1.164 (17.225)	7.824 (11.914)	8.736 (12.707)	17.807 (13.193)	-5.329 (13.415)	4.659 (10.695)
URC – DPC   TEL	-82.563 (15.032)	<b>58.048*</b> (34.382)	<b>-112.394***</b> (17.343)	59.111 (43.130)	-0.670 (13.124)	53.594 (43.916)	<b>-68.338**</b> (12.199)	50.940 (38.219)

**Notes:** N = 37 state panels with fixed fiscal rules (1986–2020). Entries are standardized differential treatment effect estimates (percentage terms) based on each respective income inequality outcome measure's within-state standard deviation. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Fully Restricted (FR) model specification only contains treatment covariates, plus state and year unit effects. Unrestricted (UR) Model Specification Control Covariates: *State Economic Policy Liberalism, State Real Per Capita Income, State Unemployment Rate, State Poverty Rate, State Rainy Day Fund Balances, Supermajority Tax Increase Requirements, and State Strong Balanced Restrictions.*

\* p ≤ 0.10      \*\* p ≤ 0.05      \*\*\* p ≤ 0.01.

## **APPENDIX D**

**Sensitivity Check, 3: Comparison to Alternative Income Inequality Measures: Indices Possessing Inferior Properties (Gini & Relative Mean Deviation) & Income Shares for Super-Wealthy Citizens (Top 0.01% & Top 0.001%)**

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**TABLE D1**

**Evaluating Fiscal Rules and Partisan Control of Governments Effects on Income Inequality in the American States, 1986–2020**  
*(Sensitivity Check, 3: Alternative Measures of Income Inequality)*

Treatment Covariates	Gini (FR)	Gini (UR)	RMeanDev (FR)	RMeanDev (UR)	Top 0.1% (FR)	Top 0.1% (UR)	Top 0.01% (FR)	Top 0.01% (UR)
<b>Divided Partisan Control: TEL</b>	0.616 (0.649)	0.243 (0.597)	0.831 (0.939)	0.280 (0.804)	-0.330 (0.431)	-0.181 (0.386)	-0.256 (0.277)	-0.153 (0.251)
<b>Unified Democratic Control: No TEL</b>	0.280 (0.406)	0.352 (0.405)	-0.095 (0.469)	-0.066 (0.368)	0.222 (0.249)	0.127 (0.217)	0.124 (0.166)	0.065 (0.148)
<b>Unified Democratic Control: TEL</b>	0.100 (0.335)	-0.114 (0.309)	0.070 (0.322)	-0.256 (0.262)	-0.086 (0.217)	-0.074 (0.188)	-0.059 (0.138)	-0.051 (0.121)
<b>Unified Republican Control: No TEL</b>	0.253 (0.418)	0.593 (0.412)	0.129 (0.424)	0.689 (0.432)	0.196 (0.355)	0.247 (0.313)	0.152 (0.247)	0.183 (0.221)
<b>Unified Republican Control: TEL</b>	-0.287 (0.463)	0.059 (0.412)	-0.284 (0.502)	0.394 (0.434)	0.015 (0.234)	<b>0.282*</b> <b>(0.162)</b>	-0.015 (0.158)	0.154 (0.112)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
State & Year Unit Effects	YES	YES	YES	YES	YES	YES	YES	YES
AIC	6,967.660	6783.816	7303.984	6895.059	5763.232	5484.975	4481.271	4250.997
BIC	7,180.100	7034.386	7516.424	7145.629	5975.672	5735.545	4693.711	4501.567
Number of Observations (Panels)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)	1,295 (37)

**Notes:** Entries are regression coefficients, with *Unified Democratic Control: TEL* & *Unified Republican Control: TEL* representing the linear combination of these respective coefficients summed to their respective partisan regimes operating under No TEL. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Fully Restricted (FR) model specification only contains treatment covariates, plus state and year unit effects. Unrestricted (UR) Model Specification Control Covariates: *State Economic Policy Liberalism*, *State Real Per Capita Income*, *State Unemployment Rate*, *State Poverty Rate*, *State Rainy Day Fund Balances*, *Supermajority Tax Increase Requirements*, and *State Strong Balanced Restrictions*. **Red boldface (regular)** entries indicate alternative models produce **noticeably (marginally)** better model fit than corresponding reported model in **Table 2**.

\* p ≤ 0.10

\*\* p ≤ 0.05

\*\*\* p ≤ 0.01.

**TABLE D2**

Evaluating the Decomposition of Fiscal Rule and Partisan Control of Governments on Income Inequality in the American States, 1986–2020  
(Sensitivity Check, 3: Alternative Measures of Income Inequality — Table D1 Model Estimates)

Treatment Covariates	Gini (FR)	Gini (UR)	RMeanDev (FR)	RMeanDev (UR)	Top 0.1% (FR)	Top 0.1% (UR)	Top 0.01% (FR)	Top 0.01% (UR)
<i><u>Between TEL–Within Partisan</u></i>								
<i><u>Government Regime</u></i>								
TEL – No TEL   DPC	19.472 (20.538)	7.685 (18.882)	18.867 (21.333)	6.366 (18.267)	-14.897 (19.462)	-8.162 (17.417)	-18.703 (20.195)	-11.140 (18.295)
TEL – No TEL   UDC	-5.223 (15.749)	-13.542 (14.918)	3.463 (12.309)	-3.977 (9.362)	-16.160 (17.645)	-10.519 (14.802)	-16.399 (19.509)	-10.388 (18.295)
TEL – No TEL   URC	-21.054 (24.786)	-20.843 (24.842)	-10.885 (18.172)	-7.765 (18.578)	-9.625 (23.948)	1.848 (21.137)	-14.086 (26.520)	-2.473 (23.550)
<i><u>Between Partisan Government–</u></i>								
<i><u>Within TEL Regime</u></i>								
DPC – UDC   No TEL	8.875 (12.854)	11.168 (12.836)	-2.105 (10.368)	-1.470 (8.144)	10.290 (11.550)	5.874 (10.077)	9.018 (12.073)	4.753 (10.765)
URC – UDC   No TEL	-0.860 (18.121)	7.621 (16.950)	4.949 (14.803)	16.705 (12.863)	-1.191 (17.882)	5.604 (16.152)	2.069 (20.877)	8.570 (19.352)
URC – DPC   No TEL	8.015 (13.247)	18.790 (13.049)	2.844 (9.383)	15.235 (9.545)	9.099 (16.465)	11.478 (14.520)	11.087 (17.977)	13.322 (16.107)
DPC – UDC   TEL	16.663 (25.823)	11.547 (23.831)	17.518 (23.750)	12.337 (20.785)	-12.017 (24.594)	-5.277 (20.994)	-16.359 (26.652)	-8.465 (22.934)
URC – UDC   TEL	-12.498 (16.277)	5.589 (13.372)	-8.144 (12.528)	<b>14.966*</b> <b>(8.916)</b>	4.978 (15.876)	17.481 (12.441)	3.673 (17.544)	16.951 (14.160)
URC – DPC   TEL	-29.160 (29.861)	-5.958 (27.024)	-25.662 (27.693)	2.629 (28.683)	16.995 (22.844)	22.758 (19.219)	20.032 (24.751)	25.416 (21.230)

**Notes:** Entries are standardized differential treatment effect estimates (percentage terms) based on each respective income inequality outcome measure's within-state standard deviation. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Fully Restricted (FR) model specification only contains treatment covariates, plus state and year unit effects. Unrestricted (UR) Model Specification Control Covariates: *State Economic Policy Liberalism, State Real Per Capita Income, State Unemployment Rate, State Poverty Rate, State Rainy Day Fund Balances, Supermajority Tax Increase Requirements, and State Strong Balanced Restrictions.* \* p ≤ 0.10 \*\* p ≤ 0.05 \*\*\* p ≤ 0.01.

## APPENDIX E

**Sensitivity Check, 4: Comparison to Alternative TEL Measures Delineating Between TELs Lacking/Possessing Legislative Supermajority Override Requirements; and Between Expenditure Only TELs & Other Forms of TELs.**

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**TABLE E1**

**Evaluating Fiscal Rules and Partisan Control of Governments Effects on Income Inequality in the American States, 1986–2020**  
*(Sensitivity Check, 4: Distinguishing Among TEL Institutional Features: Legislative Supermajority Override Provisions & TEL Sources)*

Treatment Covariate	Atkinson (LSMOP)	Theil (LSMOP)	Top 10% (LSMOP)	Top 1% (LSMOP)	Atkinson (Sources)	Theil (Sources)	Top 10% (Sources)	Top 1% (Sources)
<b>Divided Partisan Control:</b> Non-LSMOP/Expenditure Only TEL	-0.359 (0.300)	-2.263 (1.568)	-0.553 (0.502)	-0.799 (0.426)	0.137 (0.354)	-0.089 (1.764)	-0.193 (0.608)	-0.234 (0.493)
<b>Divided Partisan Control:</b> LSMOP/"Other" TEL	0.800 (0.523)	3.236 (2.841)	0.979 (0.894)	0.819 (0.781)	-0.052 (0.513)	-0.662 (2.641)	0.063 (0.822)	-0.276 (0.768)
<b>Unified Democratic Control: No TEL</b>	0.057 (0.201)	0.574 (1.152)	0.128 (0.289)	0.219 (0.268)	0.017 (0.211)	0.373 (1.189)	0.053 (0.306)	0.144 (0.284)
<b>Unified Democratic Control:</b> Non-LSMOP/Expenditure Only TEL	0.114 (0.156)	0.479 (0.676)	-0.185 (0.367)	0.212 (0.222)	-0.035 (0.204)	0.234 (1.100)	0.000 (0.469)	0.011 (0.393)
<b>Unified Democratic Control:</b> LSMOP/"Other" TEL	-0.177 (0.236)	-0.592 (1.375)	-0.301 (0.499)	-0.254 (0.425)	-0.089 (0.217)	-0.675 (1.035)	-0.557 (0.355)	-0.109 (0.245)
<b>Unified Republican Control: No TEL</b>	0.305 (0.287)	2.025 (1.843)	0.504 (0.399)	0.242 (0.376)	0.290 (0.292)	1.956 (1.871)	0.493 (0.414)	0.241 (0.387)
<b>Unified Republican Control:</b> Non-LSMOP/Expenditure Only TEL	0.288 (0.247)	1.748 (1.387)	0.299 (0.451)	0.104 (0.436)	0.051 (0.300)	1.125 (1.176)	<b>0.740*</b> <b>(0.399)</b>	0.366 (0.244)
<b>Unified Republican Control:</b> LSMOP/"Other" TEL	0.093 (0.382)	1.186 (1.450)	<b>1.126**</b> <b>(0.500)</b>	<b>0.638**</b> <b>(0.320)</b>	0.440 (0.375)	2.144 (1.947)	0.944 (0.692)	0.567 (0.647)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
State & Year Unit Effects	YES	YES	YES	YES	YES	YES	YES	YES
AIC	<b>4951.459</b>	<b>10,791.230</b>	<b>7001.855</b>	<b>6314.978</b>	<b>4975.260</b>	10,810.720	7026.087	6350.974
BIC	<b>5212.924</b>	<b>11,052.690</b>	<b>7263.319</b>	<b>6576.442</b>	5236.724	11,072.180	7287.551	6612.438
Number of Observations (Panels)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)	1,715 (49)

**Notes:** LSMOP represents Legislative Supermajority Override Provisions to TELs. "Other" represents Revenue, Revenue & Expenditure, or Appropriation TELs. Entries are regression coefficients, with *Unified Democratic Control: TEL* & *Unified Republican Control: TEL* representing the linear combination of these respective coefficients summed to their respective partisan regimes operating under No TEL. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Unrestricted (UR) Model Specification Control Covariates: *State Economic Policy Liberalism*, *State Real Per Capita Income*, *State Unemployment Rate*, *State Poverty Rate*, *State Rainy Day Fund Balances*, *Supermajority Tax Increase Requirements*, and *State Strong Balanced Restrictions*. **Red boldface (regular)** entries indicate alternative models produce **noticeably (marginally)** better model fit than corresponding reported model in **Table 2**. \* p ≤ 0.10      \*\* p ≤ 0.05      \*\*\* p ≤ 0.01.

**TABLE E2**

Evaluating the Decomposition of Fiscal Rule and Partisan Control of Governments on Income Inequality in the American States, 1986–2020 (*Sensitivity Check, 4: Distinguishing Among TEL Institutional Features: Legislative Supermajority Override Provisions & TEL Sources — Table E1 Model Estimates*)

Treatment Covariate	Atkinson (LSMOP)	Theil (LSMOP)	Top 10% (LSMOP)	Top 1% (LSMOP)	Atkinson (Sources)	Theil (Sources)	Top 10% (Sources)	Top 1% (Sources)
<i>Between TEL–Within Partisan Government Regime</i>								
Non-LSMOP/Expenditure Only TEL – No TEL   DPC	-11.941 (9.971)	-17.277 (11.973)	-14.417 (13.085)	<b>-25.497*</b> <b>(13.572)</b>	4.572 (11.770)	-0.680 (13.465)	-5.026 (15.851)	-7.476 (15.711)
Non-LSMOP/Expenditure Only TEL – No TEL   UDC	1.910 (7.982)	-0.740 (9.411)	-8.163 (11.942)	-0.235 (11.219)	-1.761 (9.839)	-1.078 (12.679)	-1.399 (13.634)	-4.656 (16.414)
Non-LSMOP/Expenditure Only TEL – No TEL   URC	-0.681 (15.802)	-2.275 (20.040)	-5.864 (17.297)	-5.297 (22.617)	-9.573 (17.893)	-6.806 (19.324)	-7.074 (16.827)	-4.778 (18.179)
LSMOP/"Other" TEL – No TEL   DPC	26.594 (17.400)	24.708 (21.694)	25.534 (23.308)	26.110 (24.918)	-1.718 (17.074)	-5.051 (20.165)	1.645 (21.431)	-8.817 (24.493)
LSMOP/"Other" TEL – No TEL   UDC	-7.832 (11.055)	-9.065 (14.939)	-11.178 (14.764)	16.516 (18.917)	-3.564 (10.246)	-8.143 (12.379)	-15.910 (12.650)	-8.832 (13.670)
LSMOP/"Other" TEL – No TEL   URC	-8.509 (21.145)	-6.875 (21.210)	17.803 (19.883)	15.208 (21.159)	6.032 (21.050)	-1.546 (24.687)	12.903 (23.377)	-12.486 (32.201)
LMSOP/"Other" TEL – Non-LSMOP/Expenditure Only TEL   DPC	<b>91.898*</b> <b>(49.001)</b>	340.902 (279.533)	112.354 (86.154)	107.356 (73.739)	-9.737 (47.187)	-65.472 (258.070)	11.334 (77.329)	-20.167 (70.805)
LMSOP/"Other" TEL – Non-LSMOP/Expenditure Only TEL   UDC	-9.742 (8.613)	-8.325 (10.906)	-3.015 (14.849)	-16.281 (15.364)	-1.803 (9.912)	-7.065 (11.315)	-15.900 (18.220)	-4.175 (15.685)
LMSOP/"Other" TEL – Non-LSMOP/Expenditure Only TEL   URC	-7.828 (22.078)	-4.600 (19.575)	23.667 (21.914)	20.505 (24.122)	15.605 (22.107)	8.351 (21.039)	5.829 (25.490)	7.709 (29.967)

*Between Partisan Government– Within TEL Regime*

DPC – UDC   No TEL	1.839 (6.489)	4.055 (8.136)	3.392 (7.664)	8.009 (12.426)	0.554 (6.802)	2.634 (8.401)	1.414 (8.118)	4.767 (9.404)
URC – UDC   No TEL	8.009 (10.229)	198.488 (183.043)	9.982 (12.432)	0.777 (13.575)	8.786 (10.423)	11.181 (14.268)	11.659 (13.014)	3.216 (14.109)
URC – DPC   No TEL	9.848 (9.269)	14.309 (13.020)	13.374 (10.594)	8.009 (12.426)	9.340 (9.410)	13.815 (13.219)	13.074 (10.988)	7.983 (12.803)
DPC – UDC   Non-LSMOP/Expenditure Only TEL	-16.446 (10.783)	<b>-21.354*</b> (12.412)	-9.396 (16.609)	<b>-34.734**</b> (15.198)	6.228 (16.666)	-2.641 (19.380)	-4.872 (21.666)	-17.365 (29.994)
URC – UDC   Non-LSMOP/Expenditure Only TEL	6.056 (11.142)	9.883 (13.201)	12.380 (14.521)	-3.701 (17.827)	3.105 (11.231)	7.279 (11.984)	18.752 (14.004)	12.044 (14.959)
URC – DPC   Non-LSMOP/Expenditure Only TEL	41.314 (27.573)	<b>31.237*</b> (17.883)	21.776 (17.977)	31.033 (23.498)	-3.122 (20.715)	9.919 (20.318)	23.624 (20.607)	20.363 (20.319)
DPC – UDC   LSMOP/"Other" TEL	35.744 (23.059)	32.521 (29.863)	32.357 (27.594)	36.089 (30.733)	1.342 (20.014)	0.108 (23.465)	15.822 (22.368)	-5.686 (27.023)
URC – UDC   LSMOP/"Other" TEL	9.892 (14.626)	15.107 (15.426)	<b>36.074**</b> (16.282)	<b>30.026*</b> (16.552)	18.806 (16.493)	23.109 (19.475)	<b>38.294*</b> (20.362)	22.898 (25.196)
URC – DPC   LSMOP/"Other" TEL	-25.8532 (25.982)	-17.414 (26.452)	3.717 (25.724)	-6.062 (24.845)	17.464 (18.563)	23.000 (21.303)	22.472 (22.076)	28.584 (26.392)

**Notes:** *LSMOP* represents Legislative Supermajority Override Provisions to TELs. *"Other"* represents Revenue, Revenue & Expenditure, or Appropriation TELs. Entries are standardized differential treatment effect estimates (percentage terms) based on each respective income inequality measure's within-state standard deviation. *Divided Partisan Control: No TEL* is the baseline (omitted) comparison group. State cluster-adjusted robust standard errors appear inside parentheses. Unrestricted (UR) Model Specification Control Covariates: *State Economic Policy Liberalism, State Real Per Capita Income, State Unemployment Rate, State Poverty Rate, State Rainy Day Fund Balances, Supermajority Tax Increase Requirements, and State Strong Balanced Restrictions.*

\*  $p \leq 0.10$

\*\*  $p \leq 0.05$

\*\*\*  $p \leq 0.01$ .