Income Inequality and Tax Policy: Evidence from U.S. States 1980-2010[1]

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Tax policy directly shapes the distribution of disposable income in a society. Yet studies of the effect of inequality on redistributive public policy focus almost exclusively on social spending and public goods provision. In this article we analyze the effect of rising inequality on state tax policy between 1980 and 2010, a period when policymakers made substantial changes to state tax codes to meet increased revenue needs. As the state income distribution is endogenous given household sorting across states is influenced by state tax policy, we construct a simulated measure of income inequality to that is uncontaminated by household sorting to instrument for changes in inequality during this period. Estimates from our IV models find that within-state increases in income inequality led to a reduction in state general sales tax rates and a reduction in the income tax liability of low-income households, specifically due to the adoption of state earned income tax credits. We also find that rising income inequality led states to cut the top corporate income tax rate. We discuss of the implication of this study for understanding welfare state dynamics, the effect of inequality on policymaking, and the project of the New Fiscal Sociology.

Key Words: Inequality; Public Policy; Welfare State; Redistribution; Fiscal Sociology

[1] The authors thank Tim Smeeding, David Pedulla, Atheendar Venkataramani and seminar participants at the University of Wisconsin-Madison for their comments and suggestions. Direct all correspondence to: Rourke O'Brien, La Follette School of Public Affairs, 1225 Observatory Dr, Madison, WI 53703 robrien@lafollette.wisc.edu
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Do policymakers adopt redistributive public policies in response to rising income inequality? This question has generated a large and growing body of work across the social sciences analyzing how income inequality shapes redistributive social spending (e.g., Korpi and Palme 1998; Moene and Wallerstein 2001), public goods provision (e.g., Boustan et al 2013) and labor market institutions (e.g., Blau and Kahn 1994). Yet little research has examined the effect of rising income inequality on tax policy. This is surprising given the central role of tax policy in shaping the distribution of income in a society (Volscho and Kelly 2012; Piketty and Saez 2014; Piketty 2014) and mounting evidence that voter preferences for who, what, and how much to tax are shaped by real or perceived trends in economic inequality (Franko, Tolbert and Witko 2013; Franko 2016; see also McCall 2013).

In this article we ask: How did income inequality shape state tax policy between 1980 and 2010? Specifically, we seek to identify the effect of rising income inequality on state corporate income tax rates, state general sales tax rates, and state personal income taxes. Instead of examining revenue levels, we analyze the impact of income inequality on tax *rates* and other tax policies *codified in statute* such as the earned income tax credit (EITC); doing so ensures that any observed change in tax policy is not mechanically driven by business cycle dynamics or household behavior but instead the result of policymaking through democratic processes—typically by legislation or referenda. Examining changes in tax law permits us to simultaneously examine how income inequality shapes tax policy and tax policymaking.

We focus on U.S. states for several reasons. First and foremost, state tax codes play an important role in blunting market income inequality (Cooper, Lutz, Palumbo 2015). At the same

time, taxation has been an active area of policymaking in recent decades, as legislators across the county have tweaked, amended and even wholly reformed state tax codes. Between 1980 and 2010, state government revenue increased by more than 150% in real dollars[4], during which time 23 states adopted refundable earned income tax credits, 42 states adjusted sales tax rates and 39 states tweaked corporate income tax rates. Recent evidence indicates these changes to state tax policy served to substantially mitigate the growth of post-tax income inequality during this period (Cooper, Lutz, Palumbo 2015). The aim of this article is to test whether within-state changes in income inequality influenced those tax policy decisions.

We further argue that understanding the determinants of state tax policy is essential for any accounting of redistributive policymaking as states play an increasingly central role in funding and shaping the provision of key welfare state functions in the U.S. (see Bruch, Meyers and Gornick 2016) The rapid rise in inequality that began in the 1970s and accelerated through the 1980s coincided with the "devolution revolution" in which the federal government devolved many welfare functions to the states, reversing the expansion of Federal involvement in health, education and welfare policy begun under Johnson's Great Society programs. At the same time states were grappling with how to raise new revenue to fund an expanding public sector, policymakers in Washington were tweaking the federal tax code to provide direct income support to families through tax credits (McCabe and Berman 2016), most notably the refundable Earned Income Tax Credit. Introduced in the 1970s and expanded in the 1980s and 1990s, the EITC is now the most effective anti-poverty policy in the United States (Grogger 2004; Fox et al 2015; Holtz and Scholz 2003). The popularity of this bipartisan federal policy fueled debates in state capitals on whether to use state tax codes to also provide direct income support to low-

[4] Authors' calculation based on data from the State and Local Finance Initiative Data Query System, a joint project of the Urban Institute and the Brookings Institution.

income households. Just as states were amending tax codes to meet demands for increased revenue, tax policy became an explicit vehicle for welfare state policymaking in the United States.

Beyond its redistributive and revenue functions, state tax policy decisions have a direct impact on the well-being of individuals and families. Whether policymakers choose to fund the public sector through a regressive consumption tax or a progressive income tax shapes levels of disposable income and structures social and economic behavior, including consumption patterns. This in turn influences a broad range of outcomes from education to family formation to educational attainment to health and mortality (Newman and O'Brien 2011; Strully, Rehkopf and Xuan 2010; Averett and Wang 2016; Dalh and Lochner 2012). These effects appear to be largely concentrated among low-income households who can face dramatically different tax bills depending on their state of residence: the difference across states in total state income and sales tax liability for a family of three at the poverty line can amount to well more than ten percent of household income (Newman and O'Brien 2011).

Moreover, we argue that state tax policy is a strategically rich site for examining how inequality influences policymaking more generally. The existing literature on inequality and public policy derives hypotheses from two competing theoretical models. On the one hand, the median voter model—pioneered by Meltzer and Richard and employed widely across the social sciences—predicts that as income inequality increases the median voter will be more likely to favor redistributive policies, in this instance, more progressive tax systems. On the other hand, elite capture theory—pioneered by Dahl (1961) and Korpi (1983) and recast most recently in the American context by Bartels (2009) and Gilens (2012) among others—contends that rising

income inequality leads to a greater concentration of political power among the wealthy who can effectively push policies in line with their own interests.

Researchers have turned to the states to adjudicate between these competing theories in examining how income inequality shapes state government spending (e.g., Gouveia and Masia 1998), welfare generosity (e.g., Baumgardner 1993), public goods provision (e.g., Congleton and Bennett 1995) and even incarceration practices (Jacobs and Helms 1996). Yet state action in each of these domains is highly influenced (and often highly constrained) by decisions made in Washington with Federal policymakers structuring state action either directly through statute and regulation or indirectly by attaching strict guidelines to Federal matching dollars (Bruch et al 2016). By contrast, all fifty states are legally entitled to raise revenue through taxing their residents however they see fit without Federal approval or interference; the authority to decide who, what and how much to tax is vested in state capitols. Examining tax policymaking may be particularly instructive for understanding how policymakers respond to rising income inequality.

Given the theoretical and material importance of understanding how inequality shapes tax policy decisions, why has the question received such little attention by social researchers? No doubt in part because identifying the causal effect of income inequality on state tax policy is inherently difficult as the two are jointly determined. Within-state changes in the distribution of income over time is the net result of two processes: the differential income growth among state residents and the cross-state mobility patterns of both firms (employers) and workers. The sorting of households and firms across state lines is likely highly endogenous to real or anticipated changes in state tax policy.

The prospect of household and firm sorting across states in response to real or anticipated changes in state tax policy renders state income distributions endogenous to tax policy choices.

In the empirical analyses that follow, we solve this problem by employing an instrumental variable modeling strategy wherein we predict changes in state income inequality over time by taking the observed state income distribution in 1970 and projecting it forward according to national trends in income growth at each percentile of the distribution. A modified version of the "shift-share" instrumental variable strategy pioneered in economics (Bartik 1991; Boustan et al. 2013), this empirical strategy enables us to construct an instrument for state income inequality that is unaffected by household sorting across states.

Following a brief overview of motivating theory and existing research, we proceed with an elaboration of our empirical strategy. We then turn to a discussion of our data and results. Estimates from our IV models find that within-state increases in income inequality led to a reduction in state general sales tax rates and a reduction in the income tax liability of low-income households, specifically due to the adoption and expansion of state earned income tax credits. These findings are broadly in line with stylized predictions of the median voter model: rising income inequality leads to more progressive tax systems. Yet we also find that rising income inequality led states to cut the top corporate income tax rate, more in line with a story of elite capture. Notably, we find no effect of inequality on the income taxes paid by high-income households, although we note this may be due in part to the difficulty of modeling tax liability for this population. We conclude with a discussion of the implication of this study for understanding welfare state dynamics, the effect of inequality on policymaking, and the project of the New Fiscal Sociology (Martin, Mehrotra and Prasad 2009).

MEDIAN VOTER OR ELITE CAPTURE?

The intuition that increasing income inequality in a democratic society should lead to increased redistribution is captured by the median voter model. Posited by Meltzer and Richard (1981; 1983), the key prediction of the median voter model is that as income inequality increases, specifically as mean income increases relative to the median, the individual earning exactly the median income—the pivotal voter—will favor taxing higher income earners and redistributing to himself and lower-income earners. This stylized model sits at the center of theoretical and empirical debates over the determinants of redistribution and the impact of inequality on redistributive outcomes, although many question the empirical utility of the model for explaining real differences in welfare state policy (see, e.g., Kenworthy and McCall 2008). Most studies that employ the Meltzer and Richard framework focus almost exclusively on redistributive government spending. Nevertheless, the implication of the median voter model for tax policy is clear: as income inequality increases, taxes should become more progressive, that is, higher income households should pay more in taxes as a proportion of income than lower income households (Kenworthy and Pontusson 2005).

Counter to the predictions of the median voter model, a second theoretical framework suggests increasing income inequality may actually result in more regressive tax systems or, more precisely, tax systems that favor high income households relative to low income households. First elucidated by Dahl (1961), "relative power theory" posits that economic inequality yields political inequality; as income inequality increases, those at the top of the income distribution hold increasingly disproportionate political power and influence as they are better able to determine the contours of political discourse, amplify their own interests and concerns, and influence policymakers directly (Korpi and Palme 1998; Goodin and Dryzek 1980;

Schattschneider 1960; Lukes 2005). As inequality grows, so does the potential for elite capture of democratic processes.

Recent empirical work underscores how economic inequality and political inequality may be mutually reinforcing. Solt (2008) finds that increasing economic inequality is associated with reduced political interest, engagement and discussion among all but the wealthiest citizens. In his analysis of the voting behavior of U.S. Senators, Bartels (2009) finds that representatives are significantly more responsive to the opinions of their wealthiest citizens relative to those of their middle income constituents and that the opinions of the poorest third of constituents had no discernible effect on representative voting behavior whatsoever. He argues that this association cannot be explained by disparities in voter turnout and political knowledge, providing real evidence that wealthier constituents hold more political influence than their poorer counterparts. An analysis of nearly 1800 policy issues by Gilens and Page (2014) finds that the policy preferences of economic elites—both wealthy individuals and organized business interests—have an independent and influential effect on real policy outcomes; the preferences of average cities or mass-based interest groups have little if any independent effect on policy outcomes (see also Gilens 2012)

By what means can high income households translate their economic position in to greater political power? In discussing how concentrated income and wealth can influence politics and policymaking, Winters and Page (2009) detail several potential pathways. Wealthy elites, they assert, can influence policymaking by spending money on direct lobbying, donating to electoral campaigns, shaping public opinion (through foundations and think tanks among other avenues), and even through influencing the judiciary to more broadly and forcefully assert constitutional protections of private property. Although they and others focus either explicitly or

implicitly on policymaking at the level of the nation-state, the potential for elite capture of policymaking at the state and local levels may be even greater for several reasons. For one, state policymakers and policy staff are less professionalized than their Federal counterparts, and are often more resource constrained which limits their capacity to develop "in house" expertise thereby increasing the likelihood they rely on the expertise and analyses of third parties. At the same time, the marginal dollar spent by corporate entities and other elites—be it on direct lobbying efforts or indirectly through campaign contributions—is likely to have a greater impact at the state level. All of this in the context of the rapid decline of local newspapers which has significantly lessened oversight of state policymaking by the fourth estate yields an environment where moneyed interests may wield outsized influence.

If we allow ourselves to posit a world in which taxation is the only policy lever available to policymakers, the median voter model and elite capture theory offer two sets of competing predictions for how increasing income inequality will influence state tax policy. We summarize these stylized theoretical predictions for each of our tax policy outcomes in Table 1 where "-" predicts a decrease in the tax rate in the face of rising income inequality and "+" predicts an increase.

According to the median voter model, an increase in income inequality at the state level should translate in to greater tax progressivity, all else equal. This implies that increasing inequality will result in a lower general sales tax rate, as the tax burden falls disproportionately on low-income households who spend more of their income on taxable goods relative to higher income households. The median voter model also predicts that increasing inequality would lead policymakers to enact (and expand) earned income tax credits and generally reduce the effective income tax rate of low and middle-income households. The median voter model would further

predict that increasing income inequality would lead policymakers to increase corporate income tax rates as well as the effective tax rate on higher income households, particularly in a closed system where decreasing taxes on the poor must be offset by increasing tax burdens on the wealthy.

Elite capture theory predicts that increasing inequality would result to an increase in the sales tax rate: higher sales taxes results in a greater chunk of state revenue being drawn from low-income households. This theory predicts that increasing inequality will result in a more regressive income tax system—lower effective personal income tax rates for high-income earners offset and higher income taxes on low and middle income households. Finally, because wealthy elites benefit most from corporate profits, elite capture theory would predict that rising income inequality will lead policymakers to cut corporate income taxes.

To be sure, these are highly stylized predictions of how state policymakers may respond to increasing income inequality. In the real world, state tax policymaking is influenced and constrained by a number of factors, including the inertia inherent to historical reliance on some tax instruments over others and the real need to balance state budgets. Tax policy decisions are also rarely made in isolation: the decision to increase or decrease a certain tax is often made in conjunction with some expected change in government spending. Given that each of the 50 states has a historically conditioned tax system and a unique set of institutional arrangements, the way in which inequality influences tax policymaking will be highly specific and contingent. The stylized predictions offered by these two competing theoretical models provides us with generalized hypotheses that enable us to abstract across the 50 unique tax systems present in our state level analyses.

EXISTING RESEARCH ON INEQUALITY AND TAXATION

Despite a large and continually growing body of work examining the relationship between inequality and redistributive social spending, there is comparatively less work examining the impact of inequality on tax systems (see Chernick 2005; Allen and Campbell 1994; Borge and Rattso 2004; O'Brien 2017). For the purposes of the current analysis, there are two recent studies in economics worth highlighting.

In the first study, Boustan et al. (2013) examine the impact of local area income inequality on municipal revenue and expenditure levels. Using a similar identification strategy to the one we employ below, the authors construct a measure of local area inequality that is unaffected by moves in to or out of the local area to instrument for real changes in inequality. They find that increasing income inequality at the municipal and school district level in the U.S. leads to an increase in overall revenue and expenditures levels at the local level, net of the wealth of the tax base, broadly in line with predictions from the median voter model. Examining revenue levels from specific tax instruments, Boustan and colleagues find that increasing income inequality is associated with higher revenue from property tax, direct charges and the sales tax. A second, related study by Hearey (2016) uses the same IV strategy to test how rising income inequality across neighborhoods in the same school district affects school funding and enrollment. He finds that increasing income inequality across neighborhoods is associated with higher local school funding, again in line with predictions from the median voter model.

Our empirical analysis extends and improves upon these studies in important ways. First, we take states as our unit of analysis which—unlike municipalities, school districts or other local special taxing districts—are largely unconstrained in their ability to tax and spend. The revenue and spending levels Boustan et al. examine in their study are dictated in part by decisions that

happen at a higher level of governance (not only State but also Federal and county). Second, we examine changes in tax rates and other tax policies that are directly codified in state law. By contrast, the related studies by Boustan et al. and Hearey take revenue and spending levels as their key measures of local tax and spending policy, which makes it difficult to determine whether observed changes are the result of active policy choices or mechanical shifts due to business cycle dynamics or shifting intragovernmental investment at the federal, state, county, municipal, and special taxing district levels. In focusing on how income inequality influences tax rates and other tax benefits codified in law at the state level, our analysis provides a direct test of how policymakers respond to rising income inequality by actively enacting change through the policymaking process.

ISOLATING THE EFFECT OF INCOME INEQUALITY ON STATE TAX POLICY

Our aim is to isolate the relationship between state-level income inequality and state fiscal policy, specifically tax policy. Doing so involves addressing two identification issues – omitted variable bias and reverse causality – that are reflected in Figure 1, a depiction of our conceptual model.

We wish to identify the causal effect of income inequality on fiscal policy (A). However, income inequality is endogenous, determined in part by a state's sociodemographic composition (B). Demographic characteristics such as education, age, and race determine the composition of the labor force which, in turn, affects the distribution of incomes and observed inequality. State demographics may also have a direct effect on fiscal policy (C), such as party affiliation, political ideology, or education.

The traditional regression solution to the endogeneity of state income inequality is to isolate (A) using a comprehensive set of covariates to control for state demographic composition. This equation takes the form:

$$y_{it} = \beta_1 \times gini_{it} + \boldsymbol{\Gamma X_{it}} + \boldsymbol{S_i} + \boldsymbol{Y_t} + \varepsilon_{it} \quad (1)$$

where y measures the tax rate in state *i* during year *t*; *gini* measures the state-level gini coefficient, and β_1 represents the effect of state-level income inequality on fiscal policy (pathway A in Figure 1). $\boldsymbol{X_{it}}$ represents the set of time-varying covariates (described below) with a vector of corresponding coefficients $\boldsymbol{\Gamma}$ (pathway C in Figure 1), $\boldsymbol{S_i}$ is a set of state-specific fixed effects, and $\boldsymbol{Y_t}$ represents a set of year-specific fixed effects.

This approach has several familiar shortcomings with respect to causal inference. Foremost, estimates for β_1 will be subject to omitted variable bias if $\boldsymbol{X}$ fails to account for all relevant, time-varying demographic characteristics, including hard to measure attributes such as human capital or policy preferences. Furthermore, even with an exhaustive set of demographic controls, within-state changes in these covariates are likely to be highly correlated with our independent variable of interest – income inequality – making it difficult to precisely estimate the effect of income inequality on fiscal policy. In effect, this strategy "controls away" the variation needed to isolate a causal relationship between inequality and fiscal policy.

Figure 1 also depicts a related problem that further complicates the identification of a causal link between income inequality and fiscal policy. Over time, a state's demographic composition changes due to the movement of households in to and out of the state (D). But

patterns of inter-state migration may themselves respond to changes in state-level fiscal policy (E), creating a reverse-causal loop.

To what extent do inter-state migration flows respond to state-level fiscal policy? The inter-state mobility decisions of extremely high-earning households appear to be unresponsive to state-level variation in tax policy (Young et al. 2016). Nor is there clear evidence that state-level welfare generosity is an especially important factor in determining the inter-state moves of low-income, single parent families (Allard and Danziger 2000). There is evidence, however, that older households – "empty nesters" – are responsive to state fiscal policy when considering residential moves (Conway and Hautenville 2003; Farnham and Sevak 2006).

The reverse causal pathway (E) is even more problematic if we consider how household migration flows may be *indirectly* affected by state fiscal policy. Job-related moves are the most important driver of inter-state migration (Molloy et al. 2014). Changes in state tax policy that affect state economic development will therefore affect household migration. For example, in the latter half of the twentieth century many southern states actively pursued economic growth by reducing corporate tax rates in the hope of attracting firms and jobs (Cobb 1993). And, despite heterogeneity across sectors, firms appear to be responsive to changes in the local regulatory and fiscal environment. In some cases, these changes may prompt the relocation of production facilities and manufacturing jobs (Holmes 1998; Rork 2005). In other cases, state policy changes may prompt firms to relocate their headquarters or change their "domicile" by reincorporating in a state with a more favorable policy climate (Carruthers and Lamoreaux 2016). Regardless of the mechanism involved, there is evidence that changes in a state's policy context – including taxation – affect employment and earning outcomes for state residents (Ljungqvist and Smolyansky 2016).

One solution to the threat of reverse causality might be to include a vector of lagged covariates in $\boldsymbol{X}$ and to use a lagged measure of income inequality. However, a lagged variable approach comes with two limitations. First, it does not directly address the issue of time-varying omitted variable bias – a confounding covariate omitted at $t-1$ is no less problematic than one omitted at time t (Bellemare et al. 2015). Second, there is no clear logic for how to fix the duration of the lagged measures. Major changes to state policy are relatively infrequent, but the conditions that influence the policy shift may accumulate over a period of years, in some cases, or occur suddenly, in others (such as when a new party takes control of a state's government). In the context of state fiscal policy, it is not clear that a policy change in time t is responding to income inequality in time t, time $t-1$, $t-2$, etc.

Changes to a state's demographic composition due to inter-state migration thus poses a fundamental challenge to making causal inferences about the relationship between income inequality and state tax policy. To address the endogeneity of observed income inequality and the resultant problems of omitted variable bias and reverse causality, we develop and employ an instrumental variable modeling strategy that allows us to instrument for within-state change in income inequality using a simulated measure that is not influenced by inter-state migration. We do this by focusing on the other driver of within-state changes in income inequality over time: differential wage growth among state residents at different income levels. The wage structure is driven by long-term secular trends such as globalization (Atkinson 2015), technological change (Goldin and Katz 2008) and shifting compensation norms (Kim et al. 2015), that are exogenous to fiscal policy-making at the state level. Expanding the conceptual model presented in Figure 1, we conceptualize state income inequality in Figure 2 as having both an endogenous component –

a function of changing demographic composition (B) – and an exogenous component – a function of national trends in the wage structure (F).

To isolate the exogenous component of income inequality, our simulated measure of income inequality predicts the income distribution of a state for years 1980 through 2010 based on the state's initial income distribution in 1970 and national patterns of income growth (for related applications see Boustan et al. 2013; Aizer et al 2013; Hearey 2016). Using publicly available census microdata, we assign each individual in the 1970 sample a percentile in the national income distribution based on their family income.[5] We then lock this sample in place and simulate how the income of each household in the baseline 1970 distribution would change over time according to real changes in the national distribution by income percentile and year that we observe using CPS microdata. The instrument effectively captures the changes in a state's income distribution that result from national patterns of wage growth, netting out the changes in a state's income distribution that result from the movement of households between states. Conditional on state and year fixed effects, our instrumental variable strategy enables us to recover the causal effect of income inequality (as measured by the Gini coefficient) on state tax policy.

Figure 3 illustrates the bivariate relationship between the observed state-level Gini coefficients and the simulated state-level Gini coefficients generated using our instrument. While the two measures are closely correlated, there is substantial variation around the 45 degree line that enables us to use our simulated measure of income inequality to instrument for actual income inequality. Results from the first-stage of our IV model are presented in Table 2. This model includes data for all 50 states for the 31 years from 1980 to 2010 inclusive, yielding 1550 state-year observations. We predict real income inequality using our simulated measure of

[5] We omit respondents who report zero income, as well as those missing income data.

inequality as well as state and year fixed effects. We also include a measure of the "fiscal capacity" of the state, operationalized as total state personal income per capita (log) in order to ensure that the estimated relationship between observed inequality and our simulated measure is not driven by changes in the overall wealth of the state tax base. Standard errors are clustered at the state level. The first-stage OLS regression takes the form:

$$gini_{it} = \gamma_1 \times simulated\ gini_{it} + \gamma_2 \times \log(income\ per\ capita_{it}) + \boldsymbol{S_i} + \boldsymbol{Y_t} + u_{it} \quad (2)$$

where the estimated coefficient γ_1 represents the relationship between the simulated and observed Gini coefficients. As in equation (1) $\boldsymbol{S_i}$ and $\boldsymbol{Y_t}$ represent state and year-specific fixed effects, respectively. As displayed in Table 2, our simulated Gini is highly predictive of the real Gini (γ_1 = 1.134, t = 4.26), net of total personal income as well as state and year fixed effects. The F-statistic for equation 2 is 18.11, indicating that the instrument is strong enough to generate consistent estimates.

As anticipated, the Durbin-Wu-Hausman test statistic indicates we can reject the null (at the p<.10 level) that income inequality can be treated as exogenous in our model.[6] In the analyses below, we therefore present estimates from our instrumental variable models alongside estimates generated from standard OLS models, with and without covariates. Following the exposition of results, we test the sensitivity of our IV strategy to a number of alternative specifications.

[6] The Durbin-Wu-Hausman test statistic is significant at the p<.05 level for models that do not include the full 1550 state-year observations due to missing data or shorter time series, further motivating the use of the IV strategy.

DATA AND ANALYTIC APPROACH

To analyze the relationship between inequality and tax policy we focus on within-state changes in *tax rates* over time. Tax rates are preferable to other measures of tax policy—e.g., income tax revenue per capita or the proportion of state revenue generated by the sales tax or other instrument—because changes in tax rates are the result of a real change in public policy, whereas other measures may be driven by mechanical changes in the distribution of household income or consumption patterns. To prevent misidentifying mechanical changes in real or relative revenue as changes in actual tax policy, we focus on the impact of inequality on changes in tax rates and other policy levers that can only be changed through direct action, be it through legislation, referenda or other means. Below we detail each of our tax policy outcomes and how they are operationalized in the current study.

Sales Tax Rate: State sales tax rate is operationalized as the general state sales tax rate applied to consumer goods in the state. The general sales tax is, by most measures, a relatively regressive tax as lower-income households typically spend more of their income on (taxable) goods and services than higher-income households. The median voter model would therefore predict an increase in inequality to be associated with a decrease in the general sales tax rate; elite capture theory would conversely predict either a positive or no relationship between inequality and the general sales tax rate. These tax rate data are taken from the Correlates of State Policy Project (Jordan and Grossman 2016) and Newman & O'Brien (2011).

Corporate Income Tax Rate: Corporate income tax rate is operationalized the highest tax rate charged to corporations in the state. Elite capture theory suggests that increasing inequality may centralize political power among the wealthy who would disproportionately benefit directly

from a reduction in corporate income tax liability. These tax rate data are taken from the Correlates of State Policy Project (Jordan and Grossman 2016)

Personal Income Tax Rate: Given that many states provide a range of tax credits—including, but not limited to EITCs and Child Tax Credits (CTC)—and deductions, relying on published state income tax brackets may fail to capture many of the important changes in state income tax policy over the past three decades. Indeed, published income tax rates are often very different from the effective tax rates, that is, the net tax rate after applicable deductions, credits and exemptions are applied. We therefore generated estimated effective tax rates using NBER's TAXSIM model (Feenberg and Coutts 1993). TAXSIM is a microsimulation model that offers estimates of federal and state income tax liability for a given household, for every year from 1973 to the present. The TAXSIM microsimulation model generates estimates of the tax liability for a hypothetical household using a combination of real tax return data and detailed administrative records of applicable federal and state income tax law, updated annually.

To generate effective state income tax rates, we assume a hypothetical family with 1 adult earner and 2 dependent children under the age of 18. We further assume that the only source of household income is wage income and that the household takes no itemized deductions. We then generate estimated state income tax liability for this household type at 3 different points in the state-year specific income distribution, corresponding to the 10^{th} percentile, 50^{th} percentile, 90^{th} percentile. To capture changes in tax policy directed at the very wealthy, we also estimated the effective tax rate for a household with wage income five times that of the 90^{th} percentile, by state.

Given that about 70% of U.S. households itemize deductions in a given year, the basic assumptions of the household we used to generate effective income tax rates—all wage income,

no itemized deductions—permits us to capture a stylized estimate that, although inexact, will provide us a reasonable proxy for the real tax liabilities of low and middle income households. This approach, however, is likely to overstate the effective tax rate of upper-income households who are both likely to have qualifying deductions in excess of the standard deduction as well as other types of non-wage income, including capital gains. Although the effective tax rate generated for these high income earners is likely higher than the actual effective tax rate, our estimation strategy relies on within state change in estimated tax rates over time. Therefore, our modeling strategy will enable us to capture any changes to the marginal tax rate schedule that affects these hypothetical very high wage income families. It does not however permit us to capture changes in the tax treatment of other types of income or changes in the schedule of allowable deductions by state.

State Top Income Tax Rate: Given the difficulties associated with estimating an effective state income tax rate on high income households, we also test whether income inequality predicts changes in the income tax rate for households earnings more than 1.5 million in real dollars, taken from Caughey & Warshaw (2015) and included in the correlates of state policy dataset. Although this measure suffers from many of the same problems detailed above (the published tax rate is likely very different from effective tax rate given the propensity for these households to itemize deductions), all else equal, a higher top marginal income tax rate should translate into higher taxes on high income households and a lower top marginal income tax rate should translate into lower taxes on high income households. We also believe that analyzing changes in the top marginal income tax rate as codified in law may be instructive given the potential symbolic value to policymakers and the public.

State Earned Income Tax Credit (EITC): State EITC is operationalized as the maximum benefit level offered in the state at a given year. Many states structure their state EITC as a percentage of the federal EITC, which is in turn a function of income and number of children in the household. Other states prescribe their own benefit levels according to their own formulas. We take the maximum EITC benefit level across all household types as our measure of EITC generosity. This measure is computed using data from the UKCPR National Welfare Data set (2016).

Descriptive statistics for each of our key dependent and independent variables are presented in Table 3. There are two key factors to note from these basic summary statistics. First, there is significant variation across the 50 states for each of our key tax policy outcomes. Second, there is significant within-state variation over time on each of these outcomes: all fifty states experienced a change in income inequality during this time period, and between 23 and 41 states changed tax rates on a given tax instrument at least once during this time period. This within-state variation over time will be used to identify the causal effect of income inequality on state tax policy.

For each outcome we estimate four separate models. We first estimate an OLS model that includes state and year fixed effects and a measure of the taxable resources or "fiscal capacity" of the state, operationalized as the total personal income per capita (log). We include this measure of fiscal capacity in all models to ensure that any observed relationship between inequality and tax policy is not spurious to changes in the overall wealth of the state tax base. We then estimate a second OLS model that includes a vector of time-varying state level demographic and economic covariates: percent married; percent divorced, separated or widowed; percent single parent households; percent no high school; percent some college; percent college

graduates; percent employed; percent Hispanic; percent black; percent Asian; percent other race. Within state change on these covariates—particularly educational attainment, employment, and household structure—will be correlated with, and potentially caused by, within state change in our key predictor of Gini income inequality, obscuring the potential direct effect of inequality on state tax rates (Boustan et al 2013). We therefore next turn to our simulated instrument of inequality that is constructed assuming a fixed population in the state over time. We first present the reduced form of the IV—using our simulated measure of inequality to predict state tax rates—in a model that again includes total income per capita as well as state and year fixed effects. Finally, we present estimates from the IV model; given variation in the number of state-years in each model given small differences in data availability by outcome, we report the first-stage F-statistic for each IV model separately. We cluster standard errors by state for all models to account for serial correlation within states over time. The models below estimate the contemporaneous relationship between inequality and tax policy over time; findings are robust to various lags of the dependent variable (1, 2, or 3 years).

RESULTS

State General Sales Taxes

General Sales Tax: Estimates of the relationship between income inequality and the state general sales tax rate are presented in Table 4. Estimates from the OLS models show no statistically significant relationship between income inequality and the state general sales tax rate, although the coefficients are negative. The next column presents results from the reduced form IV model which uses our simulated Gini index of inequality instead of the observed Gini. Here we see a negative and statistically significant relationship between inequality and the state general sales

tax rate. This is confirmed in the final column which presents estimates from a model using simulated Gini to instrument for observed Gini. Results from the IV model indicate that increasing inequality is associated with a decrease in the state general sales tax rate. The point estimate on the IV model suggests that a one-point increase in the Gini index is associated with a 0.2 percentage point reduction in the state general sales tax rate. This finding is in line with predictions of the median voter model: higher income inequality leads to a reduction in the state general sales tax, a generally regressive tax instrument that disproportionately burdens low and middle-income households relative to higher income households.

State Corporate Income Taxes

Corporate Income Taxes: Next we turn to models analyzing the relationship between income inequality and the state corporate income tax rate by state (Table 5). The baseline OLS model reveals a small, negative and marginally significant ($p<.10$) relationship between income inequality and the top corporate income tax rate; the effect is washed away after including our vector of time-varying state-level covariates. Substituting our simulated Gini index reveals a large, negative and statistically significant relationship between income inequality and the state corporate income tax rate; this effect remains when we use our simulated measure of inequality to instrument for observed inequality. The point estimate from the IV model indicates that a one-point increase in the Gini index of income inequality is associated with a nearly one-half point reduction in the top state corporate income tax rate within states during this period. This estimated effect lends support to an elite capture story wherein increasing income inequality leads to policies that disproportionately favor the wealthy, here in the form of lower corporate income tax rates.

State Personal Income Taxes

Personal Income Taxes: Models estimating the relationship between income inequality and the estimated effective income tax rate for households at the 10th and 50th percentile of state income are presented in Table 6. Turning first to the effective tax rates for households at the 10th percentile, the baseline OLS model reveals a large, negative and statistically significant relationship between income inequality and the effective income tax rate for these very low-income households; this association holds even after including our vector of time-varying covariates. The negative relationship between income inequality and the effective income tax rate for households at the 10th income percentile is also observed when we use our simulated Gini of income inequality. Instrumenting for the observed Gini using our simulated Gini reveals a large, negative and statistically significant effect of income inequality on the effective income tax rate of households at the 10th income percentile. The point estimate from the IV model suggests that a one-point increase in the Gini index of inequality is associated with a 1.3 percentage point reduction in the effective income tax rate. These models suggest that as states become more unequal they make their income tax policies more progressive by reducing the income tax rate on low-income households, even to a net negative income tax rate (refund).

Table 6 also includes models estimating the relationship between income inequality and the estimated effective income tax rate for households at the 50th percentile of state income. Here we see no statistically significant relationship in either the OLS or IV model specifications, suggesting that states did not respond to increases in income inequality with any change to the taxes paid by middle-income households. Notably, the story is similar if we look at the relationship between income inequality and the taxes on upper-income household, as displayed in Table 7. Examining the estimated effective tax rate for households with incomes at the 90th

income percentile in their state as well as those who earn five times that amount, we find no evidence of a relationship between income inequality and the effective tax rate on these high-income households in any of the OLS or IV model specifications. In sum, we find no relationship between income inequality and the effective income tax rate of middle and upper-income households, although it is important to underscore that our estimated effective tax rate is likely to function less well as proxy for the real effective tax rate as we move up the income distribution.

State Maximum EITC Benefit: Table 8 presents estimates from models predicting the state maximum EITC benefit level. Given the substantial estimated effect of income inequality on the effective tax rate of low-income household, we should expect to see a within-state increase in income inequality predicts a higher state maximum EITC benefit. And that's exactly what we see in Table 7. The baseline OLS estimates reveal a small, positive, and statistically significant effect of income inequality on EITC benefit level—although this association is sensitive to inclusion of state-level time-varying covariates. Turning to the reduced form and IV estimates, we see a statistically significant and economically substantial effect of income inequality on state ETIC benefit levels: estimates from the IV model indicate that a one-point increase in the Gini index of inequality is associated with a $170 increase in the maximum state EITC benefit level.

State Top Marginal Income Tax Rate: Finally, the second panel in Table 8 examines the effect of income inequality on the state top marginal income tax rate. Here again we see no discernable relationship between income inequality and income tax policy targeted at high income households. Again, it is difficult to accurately estimate the income tax liability of high income households. Nevertheless, finding no effect of inequality on either the estimated effective tax rate

or the published top marginal income tax rate provides some evidence, albeit indirect, against a median voter story: if policymakers were looking to show their electorates they are responsive to rising income inequality by increasing taxes on the wealthy, we might expect that to be captured in the measures we use here. At the same time, these measures are not well suited to capture deductions, credits or other ways policymakers may tweak the tax code to favor high income earners. We therefore can not confidently rule out an elite capture story wherein increasing income inequality leads to lower tax burdens on high income households, although our measures find no such association.

Taken together, estimates from our IV models indicate that income inequality led to a decrease in state income tax liability for low-income households, in part through the adoption and/or expansion of State EITC benefits. This comports with stylized predictions from the median voter model and suggests that mitigating effect of state income tax policy on post-tax income inequality observed during this period (Cooper et al 2015) was in part a direct response to the rise in inequality itself.

Sensitivity Analyses

Our simulated measure of income inequality is constructed by applying national trends in the growth of household income to a fixed distribution of households in each state. One potential concern with this strategy is that national trends in household income are heavily influenced by trends in household income in states with a large share of the national population such as California, Texas, Florida and New York. For these states, our simulated measure of inequality may therefore still be partially contaminated by household sorting, potentially biasing our results. To test for this potential bias, we reconstructed our simulated measure of income inequality for

each state by taking the same fixed state household income distribution in 1970 and applying national trends in the growth of household income *computed using only households in the other 49 states.* For example, we reconstructed our simulated measure of income inequality for California by applying income trends by percentile aggregated across households in the other 49 states. This yields a simulated measure of inequality for each state over time that is not, even indirectly, shaped by household sorting in to or out of the focal state.

We present results for each of our key outcomes from IV models estimated using this version of our simulated inequality measure to instrument for actual Gini inequality in Table 9. As expected, the first-stage F-statistic is lower in these models as we are now using a constructed measure of inequality that removes the focal state when computing national income trends. Nevertheless, the instrument is strong enough to recover unbiased estimates of the effect of state inequality on tax policy; across all outcomes, the estimated effect of income inequality on state tax policy is nearly identical to that reported above. We therefore feel confident that our findings not being driven by biases resulting from the outsized influence of heavily populated states on national income trends.

Recall that in addition to our simulated measure of inequality and state and year fixed effects, our IV models also include a measure of the overall wealth of the tax base, operationalized as the total income per capita in the state (logged). We included this covariate to ensure that any observed relationship between income inequality and state tax policy is estimated net of changes in the overall wealth of the tax base. However, one could argue that state per capita income is endogenous to—that is, influenced by— trends in income inequality. Including this intermediate outcome into our model may therefore bias the estimated effect of inequality on state tax policy. To test the sensitivity of our findings, we re-estimated our IV models without

including total income per capita as a covariate: our estimates are nearly identical to those reported in the main text across each of our tax outcomes, indicating that the observed effect of income inequality on tax policy is not resulting from, or biased by, growth in the state per capita income (results available upon request).

When analyzing within-state change in a given tax instrument, it can be argued that the analytic sample should be restricted only to states that actually used that tax instrument to raise revenue during our focal time period. For example, during this period, 8 states did not levy a personal income tax, 4 states levied no corporate income tax and 5 states levied no sales tax. The the tax rate for these instruments is entered as "0" for each state-year in our sample and these states are included in our models, e.g., Florida and Texas are included in our analysis of the personal income tax even though neither state levied a personal income tax during this time period. We chose to keep states these states in our analysis because there is nothing legally precluding these states from choosing to levy such taxes. Indeed, choosing to introduce a sales tax or a tax on personal or corporate income where there was no tax before is one real potential policy response to rising income inequality. Moreover, given the inclusion of state fixed effects, the effect of inequality on tax policy is estimated from within-state change over time; therefore, states that did not levy a given tax during the time period experienced no change in the outcome variable and do not influence the estimated effects. As expected, re-estimating each of our models restricting the analytic sample to only those states that at some point in our focal period levied that tax instrument yields nearly identical results (available upon request).

DISCUSSION & CONCLUSION

How did policymakers respond to rising income inequality in recent decades? In part by making state taxes more progressive, at least from the perspective of low-income households facing lower sales taxes and lower effective income tax rates thanks in large part to the adoption and expansion of state Earned Income Tax Credits. Contrary to predictions of elite capture theory, state policymakers during this period responded to rising inequality by using the tax code to increase income redistribution—implementing changes that increased the extent to which state tax policy mitigated inequality over this time period, even as market income inequality increased dramatically (Cooper et al 2015). At the same time, we find evidence that increasing inequality led to a reduction in state top corporate income tax rates, suggesting different processes at work for tax policy affecting households compared to those affecting corporations.

Although we examined the impact of income inequality on a range of state tax policies, there are other revenue instruments we were unable to study directly due to data limitations and the inherent complexities of making comparisons across state lines. Future work should systematically investigate how income inequality influences other state tax policies including the estate tax, the differential treatment of income from different sources (e.g., wage vs. capital income), and the myriad deductions and credits that ultimately render effective tax rates much lower than would be expected given published marginal tax rates. Moreover, future work must take into consideration state and local use of non-tax revenue instruments—such as court fines, civil forfeitures, and user fees—which are (often) highly regressive and are an important sources of revenue for state and (more so) local governments. Estimating the net effect of income inequality on the overall progressivity of a state revenue system would require incorporating

trends in these revenue instruments and considering the distributional impacts of trade offs across revenue instruments within each state.

Our findings indicate that states responded to increasing inequality by reducing taxes on the poor. Yet as we note in the introduction, taxation is only one aspect of redistributive policymaking. A full accounting of the impact of rising inequality on state redistribution must incorporate both taxation and spending. It could be that states responded to rising inequality by increasing redistribution through the tax code while simultaneously slashing redistributive social spending in areas such as a health and welfare or on public goods such as highways. Modeling the net effect of income inequality on redistribution at the state level necessitates estimating the impact of changing tax and spending policy on household post tax and transfer income as well as quantifying the extent to which a given household benefits from different forms of state spending.

In isolating the effect of rising income inequality on state tax policy, this study has direct implications for ongoing debates across a range of subfields including political sociology, economic sociology, inequality and stratification, and comparative welfare state policy. Given the direct impact of state tax policy on markers of individual and household well-being, this study also has important, if indirect, implications for researchers interested in how inequality affects health and well-being, educational attainment; tax policy is one pathway that has been largely ignored. At the same time, this study furthers the project of the New Fiscal Sociology (Martin, Mehrotra and Prasad 2009), wherein sociologists are (re-)engaging with the study of taxation to gain analytic leverage on everything from the cultural underpinnings of state development (Prasad 2005; Morgan and Prasad 2009) to the nature of social movements (Martin 2013), urban politics (Pacewiz 2012) and the policymaking process (Pearson 2014). We hope

this article can serve to further discourse between subfields, whereby emerging insights from the study of taxation may provide new analytic leverage for understand the social forces that shape welfare state policy and household well-being.

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Tables

Table 1. Theory-Based Predictions, Relationship between Income Inequality and Tax Outcomes

Outcome	Median Voter Theory	Elite Capture Theory
Sales Tax Rate	-	+
Earned Income Tax Credit Benefit Level	+	-
Personal Income Tax Rate (Low-Income Families)	-	+
Personal Income Tax Rate (Middle-Income Families	-	+
Personal Income Tax Rate (High-Income Families)	+	-
Corporate Income Tax Rate	+	-

Table 2. Results from First Stage Model Predicting Observed Gini Income Inequality

Simulated Gini Coefficient of Income Inequality (0-100)	1.134 ***
	(.266)
Income Per Capita (Log)	2.066
	(2.314)
State FE	Yes
Year FE	Yes
Durbin-Wu-Hausman Test Statistic (p-value)	.085
F-Statistic (1 , 49)	18.11
State-Year Observations	1550

Notes: ***p<.001; **p<.01; *p<.05; Standard errors clustered at the state level.

Table 3. Descriptive Statistics for Tax Policy Measures and Income Inequality Across the 50 States, 1980-2010

	Mean	Std.	Min	Max	# States Always 0	# States that Change
General Sales Tax Rate	4.5	1.82	0	8.25	5	42
Top Corporate Income Tax Rate	6.56	2.81	0	12.25	4	39
Top Personal Income Tax Rate	5.21	3.16	0	13.86	8	42
Max EITC Benefit Level	115.16	309.41	0	2522	27	23
Estimated Personal Income Tax Rate						
10th Percentile	-0.39	2.18	-16.1	3.39	12	38
50th Percentile	2.77	1.78	0	7.57	8	41
90th Percentile	3.96	2.33	0	9.31	8	41
90th Percentile X 5	4.89	2.97	0	12.65	8	41
Observed Gini (0-100)	41.28	3.46	32.66	49.57	--	50
Simulated Gini (0-100)	42.54	3.31	34.39	51.34	--	50

Table 4. Income Inequality and State General Sales Tax Rate, 1980-2010

	State General Sales Tax Rate			
	OLS	OLS + Covariates	Reduced Form IV	IV
Gini Income Inequality (0-100)	- .041 (.035)	- .021 (.024)	- .255 † (.129)	- .225 * (.094)
Income Per Capita (Log)	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
First Stage F-Statistic	--	--	--	18.11
State-Year Observations	1548 (a)	1548 (a)	1548 (a)	1548 (a)
R-squared	0.94	0.95	0.94	--

Notes: ***p<.001; **p<.01; *p<.05; †p<1. Heteroskedastic robust standard errors in parentheses. Standard errors clustered at the state level.

(a) General Sales Tax Rate data missing for Idaho 1980-1981

Table 5. Income Inequality and Top State Corporate Income Tax Rate, 1980-2010

	State Top Corporate Income Tax Rate			
	OLS	OLS + Covariates	Reduced Form IV	IV
Gini Income Inequality (0-100)	- .091 †	- .031	- .520 **	- .457 **
	(.046)	(.047)	(.192)	(.170)
Income Per Capita (Log)	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
First Stage F-Statistic	--	--	--	18.18
State-Year Observations	1510 (a)	1510 (a)	1510 (a)	1510 (a)
R-squared	0.90	0.91	0.90	--

Notes: ***p<.001; **p<.01; *p<.05; † p≦.1. Heteroskedastic robust standard errors in parentheses. Standard errors clustered at the state level.
(a) Corporate Income Tax Rate data missing for Idaho (1980-2010), Iowa (1999-2000), Kansas (1993), Missouri (1993), Ohio (2006-2010)

Table 6. Income Inequality and State Income Tax Rate for Households with Income at State 10th and 50th Percentile, 1980-2010

	Estimated Effective State Income Tax Rate - 10th Percentile				Estimated Effective State Income Tax Rate - 50th Percentile			
	OLS	OLS + Covariates	Reduced Form IV	IV	OLS	OLS + Covariates	Reduced Form IV	IV
Gini Income Inequality (0-100)	- .277 **	- .182 *	- 1.483 *	- 1.309 *	- .036	- .023	- .352	- .311
	(.099)	(.079)	(.625)	(.595)	(.054)	(.037)	(.284)	(.267)
Income Per Capita (Log)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F-Statistic	--	--	--	18.11	--	--	--	18.11
State-Year Observations	1550	1550	1550	1550	1550	1550	1550	1550
R-squared	0.61	0.66	0.61	--	0.89	0.90	0.89	--

Notes: ***p<.001; **p<.01; *p<.05; † p≦.1. Heteroskedastic robust standard errors in parentheses. Standard errors clustered at the state level.

Table 7. Income Inequality and State Income Tax Rate for Households with Income at State 90th Percentile and 5 Times the 90th Percentile, 1980-2010

	Estimated Effective State Income Tax Rate - 90th Percentile				Estimated Effective State Income Tax Rate - 90th Percentile x 5			
	OLS	OLS + Covariates	Reduced Form IV	IV	OLS	OLS + Covariates	Reduced Form IV	IV
Gini Income Inequality (0-100)	.032	.031	.056	.050	.085	.055	.056	.050
	(.057)	(.039)	(.332)	(.279)	(.067)	(.053)	(.332)	(.279)
Income Per Capita (Log)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F-Statistic	--	--	--	18.11	--	--	--	18.11
State-Year Observations	1550	1550	1550	1550	1550	1550	1550	1550
R-squared	0.68	0.92	0.91	--	0.91	0.92	0.91	--

Notes: ***p<.001; **p<.01; *p<.05; † p≦.1. Heteroskedastic robust standard errors in parentheses. Standard errors clustered at the state level.

Table 8. Income Inequality and Maximum State Earned Income Tax Credit Benefit and Top Personal Income Tax Rate

	Maximum EITC Benefit Level				Top Personal Income Tax Rate			
	OLS	OLS + Covariates	Reduced Form IV	IV	OLS	OLS + Covariates	Reduced Form IV	IV
Gini Income Inequality (0-100)	37.12 **	18.88	193.01 *	170.24 *	.094	.059	.110	.097
	(12.54)	(11.91)	(74.17)	(75.19)	(.080)	(.065)	(.379)	(.316)
Income Per Capita (Log)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F-Statistic	--	--	--	18.11	--	--	--	18.13
State-Year Observations	1550	1550	1550	1550	1519 (a)	1519 (a)	1519 (a)	1519 (a)
R-squared	0.57	0.64	0.58	--	0.88	0.88	0.87	--

Notes: ***p<.001; **p<.01; *p<.05; † p≦.1. Heteroskedastic robust standard errors in parentheses. Standard errors clustered at the state level.

(a) Top Personal Income Tax Rate data missing for Idaho (1980-2010)

Table 9. Estimated Coefficient on Gini Inequality from IV Models Using "Other 49" IV Construction

			Estimated Effective Income Tax Rates					
	Sales Tax	Top Corporate Income Tax	10th Percentile	50th Percentile	90th Percentile	90th Percentile X 5	Top Income Tax Rate	Max EITC Benefit
Gini Income Inequality (0-100)	-.262* (.101)	-.470** (.166)	-1.155 † (.641)	- .244 (.287)	-.106 (.276)	.140 (.274)	.216 (.313)	159.824* (.80.783)
Income Per Capita (Log)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F-Statistic	13.84	13.90	13.83	13.83	13.83	13.83	13.77	13.83
State-Year Observations	1548	1510	1550	1550	1550	1550	1519	1550

Notes: ***p<.001; **p<.01; *p<.05; † p≦.1. Heteroskedastic robust standard errors in parentheses. Standard errors clustered at the state level.

Figures

Figure 1. Conceptual Model

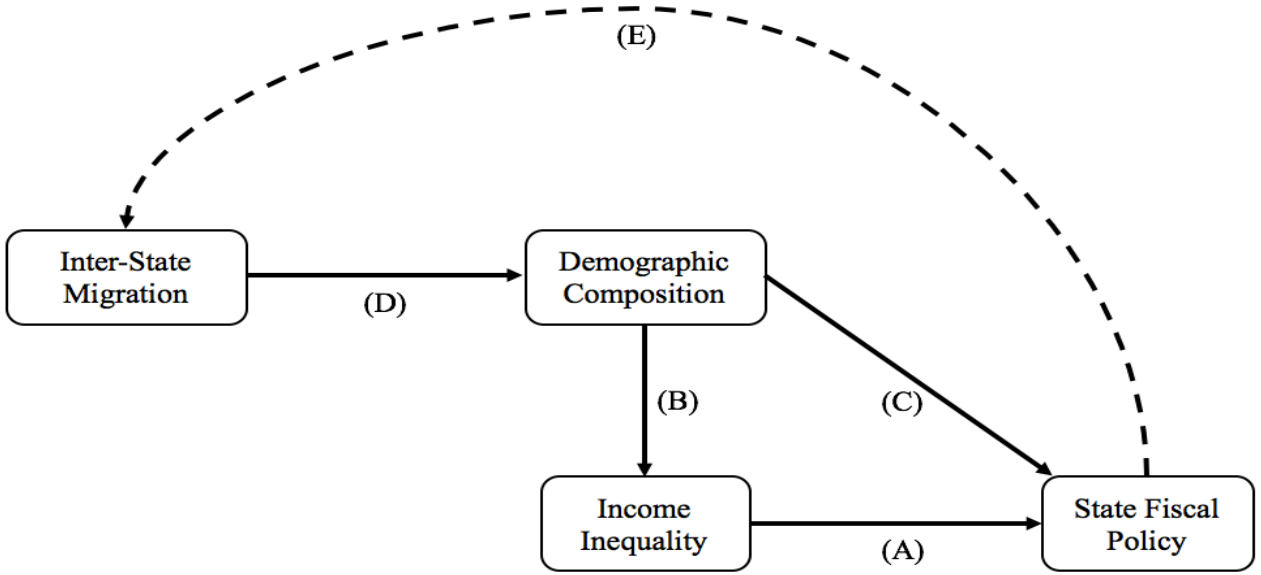

Figure 2. Conceptual Model with Exogenous Component

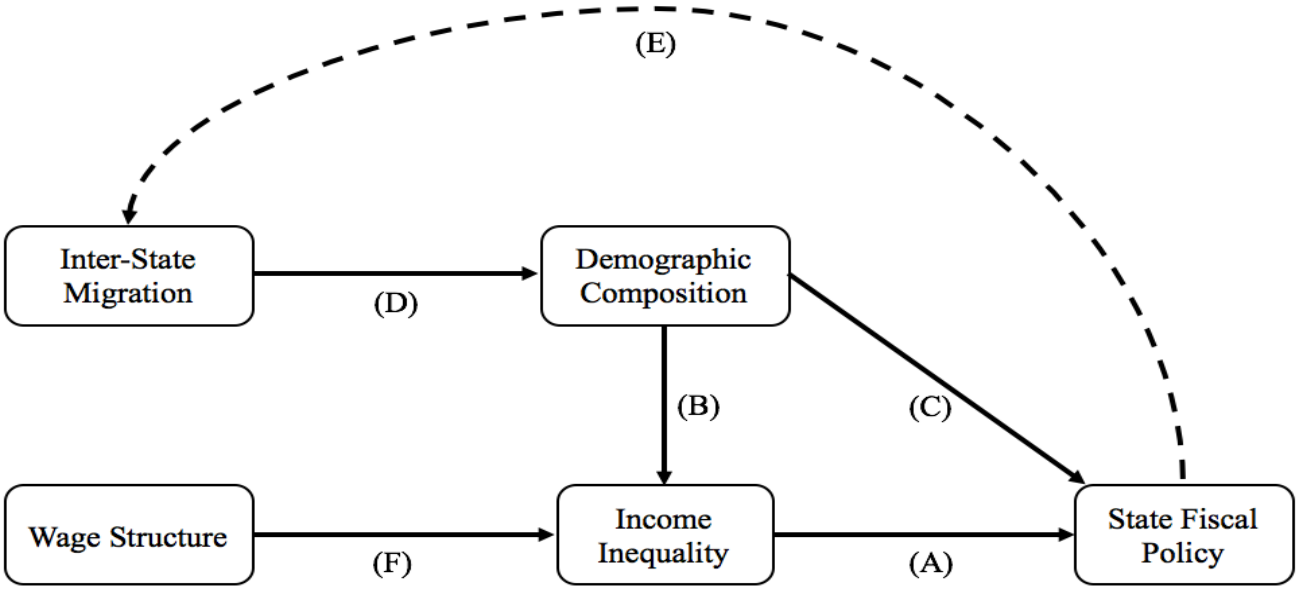

Figure 3. Bivariate Scatterplot, Observed and Simulated Gini Coefficients