

# No taxation, no representation? Oil-to-cash transfers & the dynamics of government responsiveness in Alaska

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## Abstract

Does the absence of taxation lead to a lack of representation? The answer to this question is at the heart of decades of scholarly work on natural resource politics—notably the purported causal mechanism that links resource rents to the resilience of anti-democratic institutions. One microfoundation underpinning this mechanism is that taxes strengthen citizen demands for government accountability, whereas resource revenues weaken such demands through the distribution of state-provided goods and hand-outs. I look to the next sequential step in this mechanism by shifting the focus from citizens to how leaders behave differently when taxes are replaced with resource wealth. In the context of Alaskan state politics, I show that the decision to repeal state taxes in 1980 and to distribute unconditional oil-to-cash transfers starting in 1982 prompted a decline in government responsiveness. These findings bear theoretical implications not only for the study of natural resource politics but also the broader study of the determinants of representative government.

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# 1 Introduction

Does the absence of taxation lead to a lack of representation? The answer to this question is at the heart of decades of scholarly work on natural resource politics. Scholars have long argued that resource revenues free leaders from the need to tax their citizens to finance government expenditures, thereby severing the fiscal link that sustains the social contract between citizens and the state (Mahdavy, 1970; Beblawi and Luciani, 1987; Ross, 2001; Morrison, 2015). This “taxation mechanism” remains a causal pathway of choice for the so-called “political resource curse” that links revenues derived from the sale of petroleum, minerals, and precious stones to bad governance outcomes such as the loss of personal freedoms, a weak rule of law, and the resilience of anti-democratic institutions.<sup>1</sup> The microfoundation that drives this mechanism is based on accountability—that taxes strengthen individual demands for government responsiveness, whereas resource rents weaken these demands—and hence asserts “a citizen-centered explanation for the resource curse” (Palmer, 2013, 706).

In this study, I look to the next sequential step of this microfoundation by shifting the focus from citizens to how *leaders* behave differently when taxes are replaced with resource rents.<sup>2</sup> Moving beyond such broad and complex constructs as democratization and leadership survival, I assess whether resource wealth tarnishes good governance by looking precisely at one fundamental aspect of democracy: whether the government responds to the preferences of its citizens (Dahl, 1971). The theory I put to the test is that when oil-funded handouts replace income taxes, leaders become less responsive to their citizens’ demands and opinions.

I accomplish this by analyzing the decision to eliminate taxes and to distribute an annual, unconditional, individual cash transfer of oil revenues under the Alaska Permanent

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<sup>1</sup>Ross (2001) highlights two additional mechanisms for the resource curse, based on a “spending effect” whereby resources finance patronage and public goods provisions, and a “repression effect” whereby resource wealth fosters praetorianism. Dunning (2008) espouses a different taxation mechanism, via the effects of natural resource wealth on income inequality.

<sup>2</sup>Indeed, Palmer (2013, 723) urges scholars to consider the other component of this relationship: “While the findings (of this study) suggest that taxation gives citizens stronger incentives to restrain government, evidence that it likewise gives politicians the incentives to make government more transparent, responsive, and efficient is still needed.”

Fund Dividend (PFD) program. Using annual data on citizen policy preferences and state legislative policy outcomes over the 1973–2012 period, I test whether the repeal of income taxes in 1980 and exogenous fluctuations in cash payments starting in 1982 affect changes in the gap in policy preferences between Alaskan citizens and their representatives. This context allows for a direct test of whether taxation fostered representation prior to 1980 and importantly whether the state’s decision in light of the dramatic increase in oil revenues to abolish the income tax—and to replace it with a negative tax of approximately \$1,600 per person per year—led to a loss of representation.

This paper brings four innovations to the literature on natural resource politics and to the broader study of energy policy. First, I propose a novel outcome measure in the quantitative study of the resource curse, by assessing whether natural resource wealth affects *dynamic government responsiveness*—a topic which has been debated theoretically (Pogge, 2008; Wenar, 2015; Wiens, 2015) but remains untested. In doing so, I provide a new look into the study of the comparative political economy of natural resources by bringing in the American politics literature on political representation.

Second, I provide a tough test of the *rentier* state theory in the context of an advanced democracy. Here I build on the pioneering work of Goldberg, Wibbels and Mvukiyehe (2008) and Simmons (2016) by evaluating the United States as a case in the resource curse context. But by exploiting exogenous shifts in oil-to-cash handouts and by employing synthetic control methods to construct viable counterfactuals, I dive deeper into the sub-national context of the US with an identified evaluation of political dynamics in one state over time.

Third, I contribute to the ongoing debate within the study of oil politics on how to measure oil wealth. The variables I employ offer precise, per capita amounts of direct resource wealth that citizens actually receive every year—not an estimate derived from noisy data on production and prices (Ross and Mahdavi, 2014) or reserves and percentages of GDP (Cotet and Tsui, 2013), nor a measure based on one-time amounts given to survey participants.

Fourth, I conduct a policy evaluation of oil-to-cash programs, using the example of the

PFD, on heretofore unexamined consequences relating to political behavior. Studies show that the PFD has noticeably reduced income inequality, increased household income stability, and improved the trade and service sectors of the local economy (Goldsmith, 2002; Hsieh, 2003). Yet despite these economic benefits, I find evidence that these handouts have severed the link between state and citizen, resulting in state policies that are largely unresponsive to the dynamic preferences of Alaskan citizens.

Alaska is an ideal testing ground for hypotheses about the political effects of resource wealth. The ethno-cultural heterogeneity of its indigenous and non-indigenous people, its lack of value-added and income taxes, and its extreme fiscal reliance on oil revenues make the state of Alaska representative of oil-rich countries in the Middle East, Africa, Southeast Asia, and Latin America. Yet the overall negative effects on government representation of Alaska's oil-to-cash transfer programs should not be under-appreciated. That this can happen even in an advanced, developed democracy such as the United States suggests great caution with how oil-to-cash transfers will be implemented in developing democracies such as Brazil, Nigeria, and Indonesia, or in transitional systems such as Iraq, Myanmar, and South Sudan.

I begin by reviewing in a comparative context the literatures on the resource curse and political representation, and I derive testable hypotheses based on extant theoretical propositions. I next briefly describe the context of Alaska and the decision to repeal taxes in 1980 and to create the PFD in 1982. I then provide details on the data and methods employed and show statistical evidence for the negative effect on government responsiveness of both the loss of taxation and the direct distribution of oil revenues. Finally, I close with a discussion of the policy implications of my preliminary results for countries considering oil-to-cash transfers and provide potential avenues for future research.

## 2 Theory

Institutional historians have long argued that the invasive nature of taxation into citizens' lives prompted the need for political consent, a sentiment typically summed up in the ancient Roman adage, *quod omnes tangit, ad omnibus approbetur* (that which touches all, must be approved by all) (Henneman, 1971). Because of the ability to rely on wealth derived from commodities and minerals, resource-rich rulers have largely avoided such financial invasions into their citizens' lives. Yet this is precisely why scholars argue that such states are “cursed” by their resource wealth.

One micro-foundational claim, *inter alia*, underpinning this theory is that oil revenues allow leaders to win citizen acquiescence through direct distribution rather than popular support through political representation (Anderson, 1987; Crystal, 1989; Herb, 1999). This argument rests on the theory of the *rentier* state, wherein reliance on rents—typically natural resource revenues, but also sources such as foreign aid and remittance payments—weakens the government's accountability to citizens (Mahdavy, 1970; Beblawi and Luciani, 1987; Karl, 1997). This is the classical “*rentier* social contract” whereby “the state provides goods and services to society (such as subsidies on basic commodities) without imposing economic burdens, while society provides state officials with a degree of autonomy in decision-making and policy” (Wiktorowicz, 1999; Herb, 2005, 608, 298).

This channel provides the basis upon which natural resource wealth is theorized to undermine democracy, promote authoritarianism, and disincentivize good governance in general. The often-sought link between oil and autocracy is not only that resource wealth allows for purchasing support but also that rents obviate taxes. Without taxation, the citizen-state linkage is broken—allowing leaders to stay in power indefinitely without much accountability, as long as the state delivers on its contract “to enhance quality of life rather than democratic principles” (Wiktorowicz, 1999, 608). Thus, while taxation motivates citizen demands for representative government, its absence provides little incentive for representation. Indeed, one of the most cited passages by resource curse scholars is Samuel Huntington's edict-like

claim that “the lower the level of taxation, the less reason for the public to demand representation” (Huntington, 1991, 65).<sup>3</sup>

Prior work that empirically assesses the resource curse theory—and indeed much ink has been spilled in testing its hypotheses—has conceptualized “representation” in terms of the presence of democratic government (Ross, 2001; Jensen and Wantchekon, 2004; Herb, 2005; Smith, 2007; Dunning, 2008; Aslaksen, 2010; Luong and Weintal, 2010; Haber and Menaldo, 2011; Ramsay, 2011; Liou and Musgrave, 2014; Brooks and Kurtz, 2016), or the absence of representation as the durability of autocracy (Smith, 2004; Cuaresma, Oberhofer and Raschky, 2011; Ulfelder, 2007; Morrison, 2009; Ross, 2012; Andersen and Aslaksen, 2013; Wright, Frantz and Geddes, 2015).<sup>4</sup> Or the theory has been put to the test such that representation is defined as popular engagement in politics, typically operationalized as citizens holding politicians accountable by corresponding with elected representatives, by attending local political councils, by expressing support for regular and open elections, or simply by turning out to vote (Moore, 2004; McGuirk, 2013; Paler, 2013; de la Cuesta et al., 2016; Bhavnani and Lupu, 2016).

What remains untested in this deep, rich literature is the effect of natural resource wealth on representation once leaders are in power. That is, representation as defined in Robert Dahl’s classic assertion that “a key characteristic of a democracy is the continuing responsiveness of the government to the preferences of its citizens” (Dahl, 1971, 1). Indeed, the premise of modern democracy, to paraphrase Abraham Lincoln, is founded upon a government not only of the people and by the people, but also *for* the people. When governments

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<sup>3</sup>Cited, for instance, in Ross (2004); Paler (2013); Prichard (2015); de la Cuesta et al. (2016).

<sup>4</sup>The overwhelming focus on democracy as operationalized by measures of regime type (e.g. Polity, Freedom House) could be attributed to the broad accessibility of these measures in the early 2000s, or perhaps because of an early empirical choice made by Michael Ross:

“Different taxation-produces-representation theories have somewhat different dependent variables: those that focus on early modern Europe and colonial America suggest that taxation led to the rise of representative institutions, while those that concentrate on the contemporary developing world suggest taxation leads to democracy. Since I am interested in the contemporary application of these hypotheses, and since my data cover the years since 1970, I take ‘democracy’ - or more properly, regime type - as my dependent variable.” (Ross, 2004, 239)

cease deferring to the policy preferences of their citizens, the “triumph of democracy” will wither away (Bates and Lien, 1985, 53). Slightly modifying the argument made by Bates and Lien (1985), this process will occur when leaders wrest control over public policy from their principals by relieving citizens from the obligation to pay taxes and thus severing the fiscal linkage between state and citizen. In this way, the loss of taxation and its consequential responsiveness-diminishing effects can cast light upon the origins of non-democratic institutions in resource-rich states.

How can we theorize political representation in the context of natural resource wealth? A first step is to build on the literature on how representation is conceptualized (Golder and Stramski, 2010). One view on representation is defined in terms of ideological congruence between citizens and their elected representatives, as measured by the absolute distance between government and the median voter (Downs, 1957). A more complex view than this “one-to-one” congruence, and one that is more relevant to the research question at hand, is a conceptualization that considers the dynamics of this relationship as well as the full breadth of preferences of both leaders and citizens (“many-to-many”). Specifically, this characterization of representation considers whether changes in citizen preferences cause changes in government policies, without necessarily considering the quality of these policies. This notion, often termed *dynamic responsiveness*, evaluates how well leaders are performing at representing the demands, interests, and preferences of their citizens as they evolve over time. The focus is not primarily on changes in who is in office (i.e., elections) or how the policy positions (i.e., ideologies) of those in power evolve (Pitkin, 1967), but rather policies themselves: how leaders behave once in office in terms of “the rules, mandates, programs and prohibitions that governments impose on their citizens” (Caughey and Warshaw, 2016, 1).

Scholars of American politics provide a host of theories for when and why leaders will be more responsive to their citizens. Perhaps the most obvious of these theories rests on the desire for reelection, creating a powerful incentive to adhere to voter demands and please

constituents (Mayhew, 1974; Stimson, Mackuen and Erikson, 1995). Partisan selection similarly plays a strong role: a majority of voters chooses officials based on party ideologies closest to their positions in the first place (Ansolabehere, Snyder and Stewart, 2001). Elections can also affect responsiveness depending on institutional design, including factors such as direct democracy, open primaries, term limits, and campaign spending regulations (see Canes-Wrone, 2015, for a review). Yet given the constancy of elections and electoral institutions, it is puzzling why responsiveness changes over time: Jacobs and Shapiro (2000) argue that the dynamics of responsiveness stem from changes in how politics is *perceived* by voters, including factors such as trust, accountability, and concern over whether politicians listen to their constituents.

Going back a step theoretically, it is worth considering the dynamics of *voter* preferences and how constituents' demands from government evolve over time. In other words, what do voters want from government? Perhaps more pertinent to the case I examine below, what do voters expect from state legislators and local politicians? Classical theories of political behavior point to personal economic wellbeing as the most salient linkage between voters and incumbent politicians (Campbell et al., 1960). Such “pocketbook voting” would imply that a voter wants her representatives to pursue policies that first and foremost improve, or at the very least do not worsen, her own financial condition (Fiorina, 1981). These economic considerations could move policy preferences over time if citizens adjust their expectations of how the economy, and in this case the individual returns from the oil sector, will shrink or grow in the future (Durr, 1993).

In terms of responsiveness to economic preferences, then, the primary consideration for leaders is that they enact policies that provide the greatest overall economic benefits to their citizens—whether through transferring wealth directly to constituents, or by spending government revenue appropriately to foster a stable, strong economy. Once these needs are satisfied, voters will still place demands on leaders based on preferences over social policies (Inglehart, 1971). A government that achieves both these goals—voters' economic and social



policy demands—as they change over time would be considered responsive to its citizens’ preferences.

This conceptualization of representation in terms of dynamic responsiveness directly addresses the heart of the resource curse and the *rentier* social contract. Consider again the argument that oil hinders democratic governance. The hallmark of this theory is that a government will become less representative of and less accountable to its citizens when the state can finance its expenditures through oil rents rather than income taxes. As taxes decline and oil-funded provisions increase, citizens become less concerned with perceptions of how leaders respond to their policy preferences, and more interested in maintaining the steady flow of government-provided goods and services. The theory implies a dynamic counterfactual, in that the state would be responsive to its citizens’ demands were it not for the presence of oil revenues (Herb, 2005).

The sequence of stylized mechanisms that connect the onset of oil wealth to the eventual outcome of institutional breakdown begins with the decisions to repeal taxes and to distribute oil-financed handouts.<sup>5</sup> Looking first to the consequences of eliminating taxes, there are multiple potential mechanisms underlying the effects of taxation on government responsiveness. The fiscal linkages theory avers that the taxation-representation effect is mediated by citizen acquiescence. The loss of taxation may also hinder responsiveness via alternative channels such as capture of politicians by minority interests. For instance, absent reliance on citizens for government revenues, politicians might be more inclined than usual to consider policies closer to the preferences of special interest groups and corporations rather than in line with the spectrum of citizen preferences. Eliminating taxes may also sever the “information link” between citizens and the state, such that leaders may not even know what policies their constituents prefer.

The effects of distributing resource wealth also work through multiple avenues. The the-

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<sup>5</sup>For the sake of brevity, the argument presented here omits other direct uses of oil wealth that could affect government non-responsiveness and institutional breakdown, such as the financing of repression, the outright theft of oil revenues by leaders, or the cooptation of elites in the winning coalition.

ory of the *rentier* state predicts that leaders are free to pursue their own policy aims once citizen support—or, more likely, citizen indifference—is purchased by the direct provision of goods, services, and direct cash transfers. This distribution may also affect government non-response by freeing politicians to pursue policies in line with their own ideological preferences. Leaders might see their only responsibility to citizens as ensuring that the flow of resource transfers remains uninterrupted; as long as this goal is achieved, leaders may perceive themselves more as Burkean trustees rather than Madisonian delegates of their constituents.<sup>6</sup>

Turning back to Dahl’s theory of representation, democracy will lose its vigor as the government systematically fails to respond to the changing preferences of its citizens. Hence the expectation that a continued pattern of government non-responsiveness will lead to institutional breakdown. At the macro level, a democratic government *without* resource rents would be obligated to represent its citizens’ interests over time because the state would need to rely on citizen wealth to finance its activities, and therefore remain adherent to principles of democracy. A democratic government *with* oil rents, on the other hand, would lose its obligation to its citizens over time as oil revenues replace taxes in the state’s treasury, and therefore transition to more authoritarian forms of government. Thus the resource curse theorist posits that such a democracy would fail and autocracy would prevail: that oil, for example, caused the demise of Venezuelan democracy under Hugo Chavez (Monaldi and Penfold, 2014), hindered the consolidation of Russian republicanism after the fall (Goldman, 2008), and crushed any hopes of representative government in post-independence Nigeria (Sala-i Martin and Subramanian, 2003).

At the micro level, how the government responds to its citizens’ preferences over time is the key. If oil wealth does not damage government responsiveness, then we have one

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<sup>6</sup>Edmund Burke emphasized the role of members of parliament not as representatives of the narrow preferences of constituents in their districts, but rather as trusted officials elected to act according to their own judgment. James Madison, on the other hand, viewed elected officials as delegates of their electors, required to advocate positions primarily on behalf of their constituents’ preferences, however far from their own positions these preferences may be.

less theoretical reason to believe that oil hinders good governance.<sup>7</sup> Yet if oil wealth does tarnish how a government responds to the changing nature of its citizens' preferences, even in the context of a long-established democracy, then we have renewed support for macro-level claims of the existence of an oil curse.

A key difference between the theory I analyze here and that which has been tested in previous sub-national settings is the emphasis on governance as it is affected by those with the authority to make policy decisions. Whereas studies such as [McGuirk \(2013\)](#), [Paler \(2013\)](#), and [Grossman, Paler and Pierskalla \(2016\)](#) take the *citizen* as the unit of analysis—specifically, how oil and taxes differentially affect an individual's political perceptions and behavior—I look to the next sequential step by giving agency back to the *state*, focusing on how natural resources impact the responsiveness of leaders to their constituents.

## 2.1 Hypotheses

Once resource rents supplant income taxes as the main source of government revenue, I argue that political leaders will abandon their obligations to represent the preferences and interests of their citizens. This encompasses the claim that constituents will eschew their role in the political process in the absence of taxation and in the presence of oil-funded goods, services, and direct handouts provided by the state. If true, this argument implies three observable phenomena and testable hypotheses.

**Hypothesis 1:** *Resource revenues lead to less taxation than without resource revenues.*

In many ways, the entire logic of the *rentier* state theory is that resource-rich governments are less reliant on income taxes and instead dependent on rents. And yet this first logical step is rarely tested in the literature. While scholars have shown that countries with high resource

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<sup>7</sup>Such a finding would not negate evidence for other theoretical avenues of the oil-hinders-democracy aspect of the resource curse. These include the ability of states to use oil rents to finance repression, to co-opt their rivals, to reduce media freedom, or to weaken the quality of government institutions through corruption, embezzlement, or simply by dismantling well-functioning bodies of government in favor of lower-quality institutions beholden to the executive. See [Ross \(2015\)](#) for a review of these mechanisms.

wealth are correlated with low levels of taxation,<sup>8</sup> few have empirically tested whether a government that has relied on taxation to generate income will abandon income taxes once it can finance expenditures with rents from the sale of natural resources.<sup>9</sup> Following qualitative work on the origins of *rentier* states (Mahdavy, 1970; Crystal, 1989; Shambayati, 1994), I test this hypothesis in the historical context of fiscal policy dynamics in Alaska before and after the oil boom of the 1970s.

**Hypothesis 2:** *Absent taxation of its citizens' income, leaders are less responsive to citizen preferences compared to when leaders rely on income taxes.*

This is the primary mechanism of what Ross (2001) refers to as the *taxation effect* of how oil hinders democracy, typically penned by the adage “no taxation, no representation.” What is different about H2 compared to previous work is the direct emphasis on representation, which I operationalize using the measures of government responsiveness to citizens developed by Caughey and Warshaw (2016), described in more detail in section 4. By severing the fiscal link between citizen and state, elected officials will no longer feel obligated to design policies in line with voter preferences. As such, I expect that the policy preferences of state leaders will be less responsive to their constituents after taxes are abolished compared to the period when state expenditures relied primarily on voters' income taxes.

**Hypothesis 3:** *The greater the direct transfer of resource wealth, the less representative are leaders to citizen preferences.*

The second aspect of the one-two punch of *rentierism* is that resource wealth is used by leaders to buy their citizens' support. Whereas prior work examines the purchase of such support through government spending on public goods, patronage, and clientelistic bargains,

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<sup>8</sup>These are typically captured in terms of broad constructs such as taxes as a percentage of GDP.

<sup>9</sup>For instance, Ross (2012) and Morrison (2015) use the reliance on non-tax revenues as an independent variable in regressions on regime type and regime stability. Menaldo (2016) is a notable exception, in analyzing how specific tax rates in fact increased as a result of natural resource booms in Latin America. Menaldo's cross-national analysis (pp. 282-283) further shows that resource-reliant states have higher levels of non-resource taxation, providing an interesting riposte to the *rentier* hypothesis.

I focus here on perhaps the most direct method of buying acquiescence: handing out cash to citizens using revenues earned from the sale of natural resources. We should expect that the greater is this amount, the less accountable are government leaders to represent their citizens' interests when making decisions. In contrast, should these handouts diminish in value, leaders will once again feel the pressure of policy responsiveness based on voter preferences. In this way, the temporal effect of resource wealth and representation is fully captured in H3, compared to the binary “before/after” expectations captured in H2.

### 3 The Alaska Case

Alaska presents a highly relevant yet unorthodox context for testing hypotheses regarding the resource curse. The penultimate state to join the US, its nascent history is deeply intertwined with petroleum, from the first oil boom in 1969, to the Exxon Valdez spill of 1989, to the ongoing fight over drilling in its pristine Arctic National Wildlife Refuge. In strictly *rentier* terms, Alaska is undeniably a resource-reliant state, as oil and gas provide between 65% and 90% of state revenues (McBeath et al., 2008). The central players in its local economy are not small- and medium-size enterprises, but rather large transnational corporations: MNCs such as Alaska's “Big Three”—BP, ExxonMobil and ConocoPhillips—make up 95% of total petroleum corporate income taxes paid to the state, or roughly 72% of total statewide corporate taxes.<sup>10</sup>

Not surprisingly, petroleum dominates state politics. In nearly every election since the 1990s, oil has been the top industry provider of campaign contributions to state (and federal) candidates.<sup>11</sup> The industry spends highly on public relations campaigns, and as a result

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<sup>10</sup>The “95%” figure is drawn from McBeath et al. (2008, 4). Total statewide corporate taxes amounted to \$407.5 million in fiscal year 2014, of which \$307.6 million corresponds to total petroleum corporate income taxes and \$99.9 million corresponds to non-petroleum corporate income taxes. State of Alaska, *Spring 2015 Revenue Sources Book*, p. 4, accessed 19 August 2016 from <http://www.tax.alaska.gov/programs/documentviewer/viewer.aspx?1255r>. Note that total petroleum taxes and fees, including royalties and production taxes, amounted to \$4.8 billion in fiscal year 2014, while total non-petroleum taxes equaled \$332 million.

<sup>11</sup>Data for multiple years from the National Institute on Money in State Politics, accessed 16 August 2016

citizens are highly politically aware of the role oil and gas plays in the state’s political economy. Furthermore, it is estimated that one in three Alaska jobs depends on the oil industry either directly through industry employment or indirectly through labor sponsored by oil revenues (ISER, 2006). “In short,” according to McBeath et al. (2008, 77), “Alaskans know who butters their bread, and Alaskans overwhelmingly favor oil and gas development.” This high awareness helps allay concerns about the salience of oil wealth in public perceptions of government finances, which is generally lacking in studies of the oil-representation link in new oil producers.

Shortly after oil production began in 1977 in the North Slope, coupled with the completion of the Trans-Alaska Pipeline to transport this oil to global markets, higher oil revenues created by the 1979 oil price shock translated into a dramatic expansion in the petroleum-financed state budget. With state coffers overflowing with oil money—state revenues quadrupled from 1978 to 1980—the government decided to eliminate the income tax burden of its citizens (Alaska has never had a state sales tax). While the decision was publicly opposed by then-governor Jay Hammond,<sup>12</sup> the legislature repealed the individual state income tax with a near-unanimous vote on September 24th, 1980 (Hammond, 2012). One federally commissioned report goes so far as to suggest that “if the pipeline had not been constructed and the North Slope’s oil reserves not developed, Alaska would no doubt have maintained the state personal income tax and perhaps increased the tax rate as public service needs increased.”<sup>13</sup> What had once been a 16% tax rate<sup>14</sup> dropped to 0% as a direct consequence

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from <http://www.followthemoney.org/election-overview?s=AK>.

<sup>12</sup>In a public interview in early 1980, Hammond lamented the state legislature’s push to repeal the income tax on account of severing the link between citizen and state regarding government actions, policies, and programs. “One of my concerns with the elimination of the income tax,” Hammond asserted, “is that the *one* connector between the citizen and the government is ‘don’t you spend my tax dollars on this or that program’.” See Alaska Review 28 (1980), *In Oil We Trust*, video from the Alaska Film Archives. Accessed 18 August 2016 from <https://www.youtube.com/watch?v=87JX04Xqcp8>.

<sup>13</sup>U.S. Department of the Interior, (1999), *Economic and Social Effects of the Oil Industry in Alaska 1975 to 1999, Volume 1*, Alaska Outer Continental Shelf Region Study—Minerals Management Service 99-0041, p. 7

<sup>14</sup>The 16% rate was in effect starting in 1961, structured as a percentage of the taxpayer’s federal income tax liability. In 1975, the tax code was reformed to follow a graduated progressive tax rate of 3–14.5%. Still, in 1978 Alaska had the highest state tax burden among all 50 states, according to a report from the Tax Foundation (accessed 17 August 2016 from <http://taxfoundation.org/sites/taxfoundation.org/>

of the oil boom—an affirmative empirical test in support of H1.

Plagued by the memory of squandering its fortune from the 1969 oil boom,<sup>15</sup> the state created the Alaska Permanent Fund in 1976, approved by a two-to-one popular vote, as a savings account to set aside a certain amount of oil revenues for future Alaskans that would be off limits for state expenditures. The Fund was financed by a mandatory deposit of 25% of annual royalties collected from the sale of natural resources owned by the state,<sup>16</sup> with money then invested in a diversified portfolio of equities and fixed-income assets. While the principal of the Fund could never be touched, its earnings could be spent by the state, though during the Fund’s initial period this issue was hotly contested. Finally, in 1982 the state legislature passed a law establishing the Alaska Permanent Fund Dividend (PFD) as an equal cash payment to every single resident, regardless of age or income (see Figure A1 for a visual summary of PFD payment amounts over time).<sup>17</sup>

As an unconditional cash transfer based directly on government oil revenues, the PFD actualized the core premise of a *rentier* state’s relationship with its citizens. For example, compare the following excerpts, one from an Alaskan economist in 2002 and the other from an early proponent of the resource curse in the Middle East in 1987:

[A]n entire generation of Alaskans has grown up in an environment where government distributes checks to citizens instead of citizens sending checks to government. . . . Some feel that the only interest many Alaskans display regarding public issues is the size of their annual dividend check and their only interaction with the government comes when they cash that check. . . . This has fostered a feeling that the government exists to distribute cash to its citizens, but that individuals do not need to contribute to public life.<sup>18</sup>

Oil revenues release the state from the accountability ordinarily exacted by do-

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files/docs/abd5582b805675b87561439f543296fb.pdf).

<sup>15</sup>Goldsmith (2002, 2) notes that the \$900 million payment for exploration leases in 1968–1969 “seemed to disappear overnight, leaving behind not a legacy of new assets, but rather one of bigger government without an enhanced ability to pay for it.”

<sup>16</sup>This translates to roughly 10% of total revenues from oil production.

<sup>17</sup>In 1980, Governor Hammond proposed an age-based distribution of the earnings of the Fund to all Alaskans, whereby each citizen would receive an annual payment in proportion to the length of residence in the state. The Supreme Court of the US ruled the law unconstitutional based on the equal treatment clause. See *Zobel v. Williams*, 457 U.S. 55 (1982).

<sup>18</sup>Goldsmith (2002, 12,17).

mestic appropriation of surplus. In countries like Kuwait and Libya, the state may be completely autonomous from society, winning popular acquiescence through distribution rather than support through taxation and representation.<sup>19</sup>

So can Alaska be studied in comparison with oil-rich countries in the developing world often used in the study of the resource curse? Besides its high reliance on oil revenues and its minimal taxation, Alaska also suffers from resource-curse maladies such as corruption and low levels of transparency in public reporting of state spending.<sup>20</sup> Despite GDP per capita routinely between \$70,000 and \$100,000—largely a result of its small population,<sup>21</sup> reaching 738,432 in 2015—between 10% and 12% of Alaskans live in poverty, with up to 32% under the poverty line in rural districts.<sup>22</sup> And much like oil-producers such as Ecuador and Malaysia, Alaska is home to a high concentration of indigenous peoples (16% of the population), many of whom live in proximity to areas of petroleum extraction and distribution.

Yet in perhaps the most obvious ways Alaska is nothing like other oil-producing parts of the world. As part of the United States, Alaska’s government is an advanced, representative democracy with universal suffrage and multiple layers of political constraints and balances. And despite not paying state taxes, Alaskans still file federal income taxes and are hence fiscally linked to the federal government. Unlike nearly all major oil-exporting countries (with the notable exception of Norway), Alaska maintains a vibrant, free press, and strong legal protections for its citizens against human and labor rights violations. But it is for this very reason that makes Alaska such an interesting case to test the above hypotheses: if oil hinders government responsiveness in the context of a long-established democracy, how can

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<sup>19</sup>Anderson (1987, 10), quoted in Herb (1999, 257).

<sup>20</sup>Alaska ranked 49th out of 50 states in providing online access to government spending data, and received a failing grade on overall budget transparency. See “Following the Money 2015” U.S. Public Information Research Group report. Accessed 25 June 2016 from <http://www.uspirg.org/sites/pirg/files/reports/FollowingtheMoney2015vUS.pdf>.

<sup>21</sup>The state also has an extremely low population density of less than 1 person per square kilometer. This puts Alaska on par with resource-rich producers like Libya, Botswana, Mongolia, Namibia, and Kazakhstan—governments which despite great resource wealth have difficulties in providing public services to their populations living in remote corners of the state.

<sup>22</sup>United States Census Bureau (N.d.). Compare this figure, for instance, to rural poverty rates of 31% and 52% in oil-rich Iraq and Nigeria, respectively (World Bank WDI, *population below national poverty line: rural %*).



we expect representation to thrive under oil-to-cash policies and the abolishment of taxes in developing democracies, transitioning regimes, and dictatorships?

## 4 Data and methods

To assess the validity of the above hypotheses, I rely on statistical analysis of data on oil wealth and government-citizen relations in the context of Alaskan state politics, along with brief case studies on state-level policies. To capture the tax effect, I use an indicator for pre- vs. post-1980 years. Since Alaska eliminated the state income tax in September 1980, I include 1980 as part of the pre-tax timeframe.<sup>23</sup> I collect data on nominal dividend amounts from the Alaska Department of Revenue PFD Division, and apply CPI estimates from the Federal Reserve Economic Database to convert amounts to constant 2015 dollars. Note that while the decision to eliminate taxes is endogenous to political preferences, the dividend payment amounts are politically exogenous: they are not influenced by state officials, nor are they directly subject to crude oil prices in given year. Rather, the amount is calculated according to a set formula based on the earnings (interest, not principal) of the Permanent Fund, which is largely invested in non-oil equities and bonds.<sup>24</sup> Furthermore, these data have the added benefit of capturing the exact amount of direct oil revenue benefits each citizen receives in a given year—providing a more precise, comprehensive measure of resource wealth to test H3 than measures used in cross-national studies or field experiments. And consider that the amount distributed each year is non-trivial: the first payment in 1982 of \$1,000 (nominal) corresponded to 5%-20% of household income.<sup>25</sup>

To operationalize government responsiveness, I draw on data from [Caughey and Warshaw](#)

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<sup>23</sup>Including 1980 in the post-tax period interestingly *strengthens* the results presented below. This could partly be due to the strong expectation that Governor Hammond would not veto the tax repeal, which was widely expected (long before September) to pass in the assembly ([Hammond, 1996](#)).

<sup>24</sup>The formula is posted by the Alaska Permanent Fund Corporation online at <http://www.apfc.org/home/Content/dividend/dividend.cfm>, and the amount is announced every summer on the Permanent Fund Division website at <http://pfd.alaska.gov/>.

<sup>25</sup>In the first systematic study of the economic impact of the PFD, [Knapp et al. \(1984\)](#) document that “For one-third of all Alaskans, the 1982 dividends increased family income by less than five percent after taxes. But for one-eighth of all Alaskans, the dividends increased family income by more than twenty percent.”

(2016), who create two sets of measures that summarize preferences and policies on one dimension: *citizen policy liberalism* and *government policy liberalism*. I choose to analyze the full dimension of policies instead of a single policy (or restricted group of policies) to adhere as closely as possible to the original measure of dynamic representation envisioned by [Stimson, Mackuen and Erikson \(1995, 545\)](#) in terms of general attitudes on “whether more or less government is desirable.” [Stimson \(1991\)](#), for example, goes so far as to claim that there exists only a single latent dimension of public opinion, given that attitudes on issues as diverse as defense, education, health, civil rights, and the environment are highly interdependent.

The term “liberalism” is used in a cohesive context to capture ideology as it pertains to greater government regulation and welfare provision, and lesser government involvement in social concerns and cultural traditionalism. *Government policy liberalism* is measured using a dynamic item-response theory approach on roughly 150 policies to estimate an annual score of policy liberalism for each state from 1936 to 2014; for Alaska, data begin in 1960 ([Caughey and Warshaw, 2015b](#)).<sup>26</sup> *Citizen policy liberalism* is measured using a similar approach with survey data on 300 domestic policy questions from 1000 surveys on public opinion in each state from 1936 to 2012; for Alaska, data begin in 1972 ([Caughey and Warshaw, 2015a](#)).<sup>27</sup> The time trend in both measures is shown in Figure 1, with Alaska highlighted in bold red. Note that these estimates are not measured on the same scale, and that there is currently no data on *citizen policy liberalism* prior to 1972.

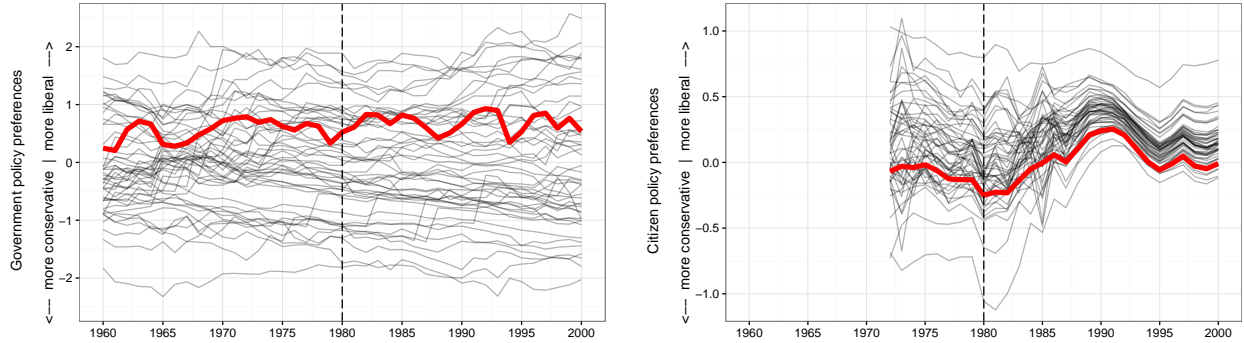
As an example of the policy-level microdata that forms the basis of these measures, consider attitudes and policies on criminal justice and reproductive rights in the 1970-1982

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<sup>26</sup>The following state-level policy areas are included in the estimation of *government policy liberalism*: social welfare, taxation, labor, environmental regulations, criminal justice laws, drug regulation, civil rights, women’s rights, morals legislation, family planning, and religion. See [Caughey and Warshaw \(2016, 12\)](#) for more detail.

<sup>27</sup>These include face-to-face and phone surveys on “nearly all policy questions asked for more than one year and the vast majority of questions asked for only a single year, particularly early in the time period when policy questions were sparse” ([Caughey and Warshaw, 2016, 14](#)). These surveys were drawn from the American National Election Study, the General Social Survey, and polling organizations such as Gallup, Pew, and others. The questions asked cover the same topics as for government policy liberalism; see above.

Figure 1: Trends in policy liberalism: Alaska versus all other states.



period. Public opinion on these and other social issues in Alaska was moderately liberal in the 1970s before shifting conservative in the 1980s—relative both to Alaska in the 1960s and to other states in the 1970s and 80s—as measured by responses in annual surveys. The state legislature congruently enacted liberal policies such as legalizing abortion in 1970 (three years before *Roe v. Wade*) and decriminalizing marijuana in 1975, but continued with liberal policies even after public opinion turned conservative. For example, in 1980 the state assembly repealed Alaska’s sodomy ban and in 1982 enacted a ban on hate crimes, one of a handful of states to do so within one year of national efforts by the Anti-Defamation League. In these policy contexts, which I discuss in further detail in section 6, Alaska’s state government would be considered responsive to citizens’ social preferences in 1970–75 but non-responsive in 1980–82.

To control for other drivers of responsiveness, I use data on partisan identification (*proportion Democrat*) of the mass public in each year (Caughey and Warshaw, 2016), logged population (United States Census Bureau, N.d.), and economic indicators for state-level inflation and unemployment (Alaska Division of Legislative Finance, N.d.). For the comparative analysis of Alaska and all other states, I include data for real per capita GDP levels, real GDP growth, and oil resources<sup>28</sup> as a percentage of each state’s GDP (United States

<sup>28</sup>For robustness, I also use per capita value of all minerals and metals, adapted from the United States Geological Survey *Mineral Yearbooks*.

Bureau of Economic Analysis, N.d.), along with controls for population, population density, and percentage of Native American residents (United States Census Bureau, N.d.). To capture partisan identification, I use presidential two-party vote share.

To estimate the level of policy representation in a given year, I follow Caughey and Warshaw (2016) and regress *government policy liberalism* on lagged *citizen policy liberalism* using OLS. Because both groups (state and citizen) are facing the same choice set in determining the level of liberalism (which is collapsed along a single dimension for each group), we can estimate the amount of government responsiveness by looking at the correlation between both measures. Positive and statistically significant coefficients imply government responsiveness; negative coefficients and coefficients indistinguishable from zero suggest that government policy is not responsive to citizen policy preferences. I interact citizen policy liberalism with the post-1980 dummy and with the dividend amount to test H2 and H3, respectively.

While allowing for the precise evaluation of the impact of eliminating taxes and the consequences of the PFD, a single-state analysis lacks a baseline to which Alaska can be compared in the post-1980 period. Perhaps all states were becoming more/less responsive to their citizens, and any post-1980 shift in responsiveness in Alaska could simply be following a national trend. To test against this and other rival arguments, and to gain more purchase on identifying the causal effect of repealing taxes on government representation, I analyze Alaska in the context of all other states using the method of synthetic control (Abadie, Diamond and Hainmueller, 2010, 2015). Here, the research design is driven by a comparison of outcomes between a state that experienced an intervention, in this case the elimination of taxes in Alaska, and states that are similar to the affected state along a variety of dimensions but did not experience an intervention. These latter states serve as a counterfactual of Alaska in the absence of eliminating income taxes in 1980. I present the results using this method in brief in the main text, but leave a fuller discussion of both the mechanics of this method and its results to Appendix 2.

## 5 Results

### 5.1 Alaska government responsiveness before and after 1980

Table 1 shows the results of a simple model comparing government responsiveness to citizen preferences before and after taxes were eliminated in 1980, using a 14-year window to capture short-term dynamics (Table A1 shows similar results from different windows; Table A2 presents long-term effects).<sup>29</sup> In column 2, I find that *citizen policy liberalism* has a moderate effect on *government policy liberalism* prior to the loss of taxation, and a negative relative effect on *government policy liberalism* after 1980. In the full sample, the standard deviation of *citizen policy liberalism* is half that of *government policy liberalism* (0.120 compared to 0.243). This implies that before taxes were eliminated, a one standard deviation change in *citizen policy liberalism* corresponds to a change in *government policy liberalism* of around 0.776—nearly a one-to-one relationship. After the loss of taxation, however, government policy responsiveness disappeared: relative to pre-1980 effects, *citizen policy liberalism* corresponds to a *negative* 0.876-standard deviation change in government liberalism, akin to a roughly zero overall effect ( $-0.010$  standard deviations; nearly identical to the estimate derived from the coefficient in column 4).

The loss in government responsiveness after taxes were eliminated is also apparent when looking at the proportion of variation explained by citizen policy preferences. The  $R^2$  drops from 0.346 in column 3 (where the sample is restricted to 1974–1980) to 0.051 in column 4 (where the sample is restricted to 1981–1987), suggesting that the absence of taxation corresponded to a period when government policy was almost completely unresponsive to the preferences of its citizens. Note that while the proportion of variation explained in the 1974–1980 period may seem low at first glance, it is noticeably higher than the  $R^2$  from the all-state sample reported in [Caughey and Warshaw \(2016\)](#) in 1976 (0.11) and in 1980 (0.25).

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<sup>29</sup>Note that none of these models incorporates any of the covariates included in subsequent models, such as partisan identification of voters, inflation, and unemployment.

Table 1: Taxation and Responsiveness in Alaska, 1974–1987

	<i>Dependent variable:</i>			
	Government policy liberalism			
	(1)	(2)	(3)	(4)
Citizen policy liberalism <sub>t-1</sub>	-0.138 (0.347)	1.568** (0.721)	1.513 (1.016)	-0.187 (0.382)
Citizen policy liberalism <sub>t-1</sub> × Post-1980		-1.770*** (0.661)		
Constant	0.643*** (0.041)	0.704*** (0.043)	0.699*** (0.077)	0.708*** (0.056)
Years included:	1974–1987	1974–1987	1974–1980	1981–1987
Observations	14	14	7	7
R <sup>2</sup>	0.009	0.476	0.346	0.051
Adjusted R <sup>2</sup>	-0.074	0.381	0.215	-0.138

*Note:* Autocorrelation-robust standard errors in parentheses.

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## 5.2 Alaska versus synthetic Alaska: Government policy liberalism

These findings could simply be driven by changes in the national trend of government responsiveness, such that after 1980 *all* states were becoming less responsive to their citizens. Indeed, numerous scholars argue that representation in the United States has considerably declined since its peak in the 1970s, which was a particularly representative period (see [Burstein, 2003](#), for a review). Using the technique of synthetic control described above—and in more detail in Appendix 2—I construct a synthetic Alaska to examine whether this rival explanation (and any others requiring a temporal counterfactual) bears any empirical merit.

I analyze the 1965–1995 period to examine changes in responsiveness from the 15 years prior to the elimination of taxes (the ‘pre-treatment’ or ‘training’ period) to the 15 years after (the ‘validation’ period).<sup>30</sup> *Government policy liberalism* remains the outcome variable, with lagged *citizen policy liberalism* included in the pre-treatment period. I also include as covariates *oil/GDP*, *GDP growth*, logged *per capita GDP*, *population density*, logged *population*, *percent Native American*, and *proportion Democrat* from presidential elections.

<sup>30</sup>In addition, I estimate projections up to 2012 to consider long-term effects. See Figures A5, A6, and A11.

All covariates are averaged across the pre-1980 period. Following [Abadie, Diamond and Hainmueller \(2010\)](#), I include multiple averages of the outcome variable in the construction of the synthetic control: in this case, the average *government policy liberalism* from 1965–1970, from 1971–1975, and from 1976–1980.

Matching on these controls creates a synthetic Alaska that is made up of Hawaii (43.8% of the mix), Oklahoma (33.4%), Wyoming (11.7%), and New Mexico (10.8%), with all other states at 0 or less than 1%. Comparatively, Wyoming and Oklahoma are good control states for Alaska: both are resource rich (the former with coal, the latter with oil and gas), sparsely populated but with high concentrations of Native Americans, and their citizens are conservative in terms of policy preferences, while government policies are relatively liberal prior to 1980. Oklahoma also relies heavily on its personal income tax, despite being rich in oil and natural gas, providing an interesting counterfactual to Alaska had it not eliminated income taxes. And Wyoming, which levies no income tax but has a state-wide 4% sales tax, maintains a natural resource fund much like the Permanent Fund but does not provide dividends.

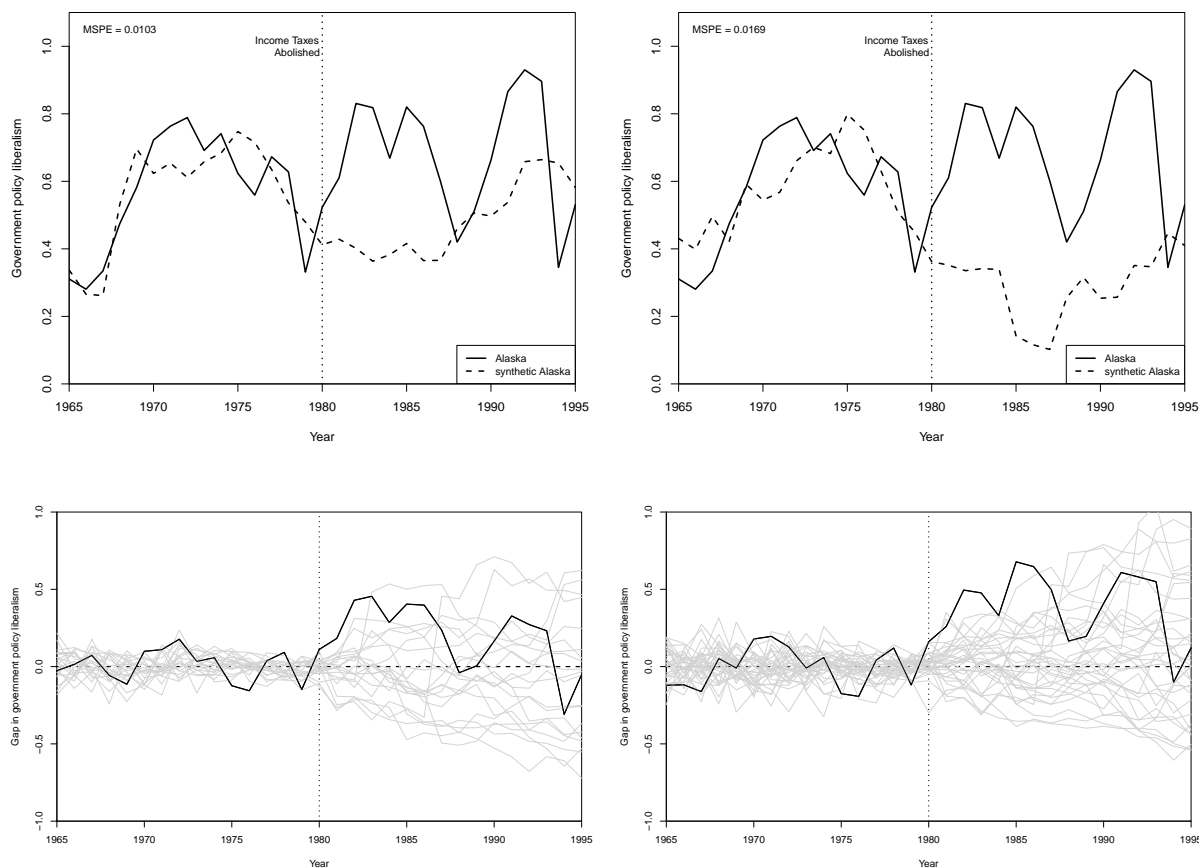
The effect of eliminating taxes on government responsiveness is estimated by comparing actual *government policy liberalism* in Alaska to its projection estimated using the synthetic Alaska.<sup>31</sup> The top-left panel of Figure 2 shows the trend in each; the bottom-left panel shows the average treatment effect. Since the synthetic control method does not give standard error estimates for the ATE, uncertainty is measured by comparing the ATE to placebos—specifically, by assigning the loss of taxation treatment to each of the other 49 states and assessing changes in their outcomes. These placebos are shown as gray lines in the plot.

Results indicate that the average treatment effect of the loss of taxation on government responsiveness—here measured in terms of how *government policy liberalism* changes over time as it is predicted by *citizen policy liberalism*—is largest in the period from 1981 to 1987

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<sup>31</sup>Responsiveness can alternatively be measured by looking at the difference in annual rankings between *government policy liberalism* and *citizen policy liberalism*. In Appendix 3, I discuss this measure further and show results consistent to those using the method above.

Figure 2: Trends in government policy liberalism: Alaska versus synthetic Alaska.



**Top-left panel:** Trends in government responsiveness over time for Alaska vs. Synthetic Alaska. Synthetic estimates based on citizen and government policy liberalism as matched variables as well as pre-1980 controls for oil wealth as percentage of state GDP, annual growth in state GDP, logged GDP per capita, logged population, population density, proportion voting Democrat in presidential elections, and Native American residents as percentage of state population.

**Bottom-left panel:** Effect of income tax repeal on government responsiveness over time (in black) compared to placebo states (in gray). These include any of the 49 states with MSPEs less than or equal to the MSPE for Alaska. Matching is performed using all covariates.

**Top-right panel:** Synthetic estimates based on citizen and government policy liberalism as matched variables as well as all pre-1980 controls except oil wealth and percent native.

**Bottom-right panel:** Effect of income tax repeal on government responsiveness over time (in black) compared to placebo states (in gray). Matching is performed using all covariates except oil and percent native.



(and larger than 98% of all other states in the placebo up until 1986). This effect follows from a pattern in the data such that, in terms of state policy dynamics, most non-coastal Western states were becoming much more conservative while Alaska remained relatively liberal. Indeed, after 1980 government policies in Alaska shifted back to the level of liberalism that existed in the early 1970s, despite voters becoming more conservative. Policies in states such as Montana, Nevada, North Dakota, and Wyoming were trending away from pre-1980 levels of liberalism towards more conservative policies, more in line with the decidedly conservative policy preferences of their voters.

These results are stronger if we exclude from the control group the top five oil- and mineral-rich states in the US after Alaska in 1980 (Louisiana, Wyoming, New Mexico, Oklahoma, and Texas). These effects, plotted in the top-right and bottom-right panels in Figure 2, provide estimates of how the income tax repeal would affect government responsiveness in an oil-rich state like Alaska compared to an oil-poor (but similar on other covariates) state like Hawai'i (37.3% of the synthetic mix), Idaho (49.2%), or Colorado (11.0%). In other words, this sample allows us to estimate the overall *rentier* effect of high oil wealth and zero income taxes compared to states with low oil wealth and non-zero income taxes.

Importantly, the data also indicate that the loss of taxation does not directly impact citizen ideology in the short run any differently than changes in the trend of public preferences in other states. A synthetic control estimate of Alaska where *citizen policy liberalism* is the outcome variable shows little change in Alaskan citizen preferences before and after 1980 compared to changes in policy preferences of citizens in a synthetic Alaska. These results, shown in Figure A4, confirm that the post-1980 changes in state policy outcomes themselves did not coincide with changes in citizen policy preferences that were any different from changes in other states—further supporting the decline in government responsiveness after the elimination of income taxes.

Results from both simple OLS models (with no covariates and no comparison units) and synthetic control methods (with matched covariates across 50 states) are supportive of H2.

Particularly in the short-term period between 1981 and 1987, the Alaska state government became less responsive to its citizen policy preferences compared to its pre-1980 responsiveness and to the estimated trajectory of responsiveness in states that closely resemble Alaska across political, demographic, and economic characteristics. Conceptually, the synthetic control results allow us to examine how well the Alaska state legislature would have responded to the policy preferences of its citizens in the absence of abolishing the state income tax in 1980. According to these models, the elimination of taxes did have a negative effect on representation, especially in light of the increasing government responsiveness of resource-rich states such as Oklahoma and Wyoming after 1980 and politically-similar but resource-poor states such as Hawai'i and Idaho.

### **5.3 Alaska government responsiveness in the post-1982 period: Effects of the Permanent Fund Dividend**

To test H3, I return to the use of OLS models with lagged *citizen policy liberalism* as the predictor for *government policy liberalism*, as in Table 1. I now include PFD payments as a mediator, as well as a small set of controls for party identification, population, and the local economy.<sup>32</sup> Here I explicitly test whether dynamics in the PFD moderate the relationship between citizen and government policy liberalism by interacting lagged one-year changes in dividend amounts (in constant 2015 dollars) with the variable for lagged *citizen policy liberalism*. As such, I focus only on the post-1982 period in which dividend payments were made; because I use one-year lags in changes of the PFD amount from year to year, the sample begins in 1984. Results presented in Table 2 indicate that the greater the amount of dividend payments, the less responsive is the government to citizen policy preferences.

The marginal effects plots in Figure 3 help to clarify the results from model 2. A year

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<sup>32</sup>Both economic indicators and population are included as they might confound the relationship between the dividend amount changes and government responsiveness. Recall that the PFD amount depends on the number of applicants in the state as well as the performance of the fund, which depends on equities in both the local and national stock markets.

Table 2: Dividend payments and Responsiveness in Alaska, 1984–2012

	<i>Dependent variable:</i>			
	Government policy liberalism			
	(1)	(2)	(3)	(4)
Citizen policy liberalism <sub><i>t</i>-1</sub>	1.396*** (0.411)	0.455 (0.339)	0.313 (0.368)	0.265 (0.358)
Δ Dividend payment <sub><i>t</i>-1</sub>	-0.0002 (0.0002)	-0.0003** (0.0001)	-0.0002** (0.0001)	-0.0003** (0.0001)
Citizen policy liberalism <sub><i>t</i>-1</sub> × Δ Dividend payment <sub><i>t</i>-1</sub>	-0.001 (0.002)	-0.002** (0.001)	-0.002* (0.001)	-0.002** (0.001)
Proportion Democrat <sub><i>t</i>-1</sub>		0.163*** (0.054)	0.168*** (0.054)	0.142** (0.055)
Population (logged) <sub><i>t</i>-1</sub>		-0.371 (0.609)	-0.406 (0.611)	-1.023 (0.755)
Inflation <sub><i>t</i>-1</sub>			2.496 (2.529)	
Unemployment rate <sub><i>t</i>-1</sub>				-0.044 (0.031)
Constant	0.518*** (0.046)	1.630 (9.190)	1.922 (9.200)	11.169 (11.259)
Observations	29	29	29	29
R <sup>2</sup>	0.361	0.755	0.765	0.775
Adjusted R <sup>2</sup>	0.284	0.702	0.701	0.714

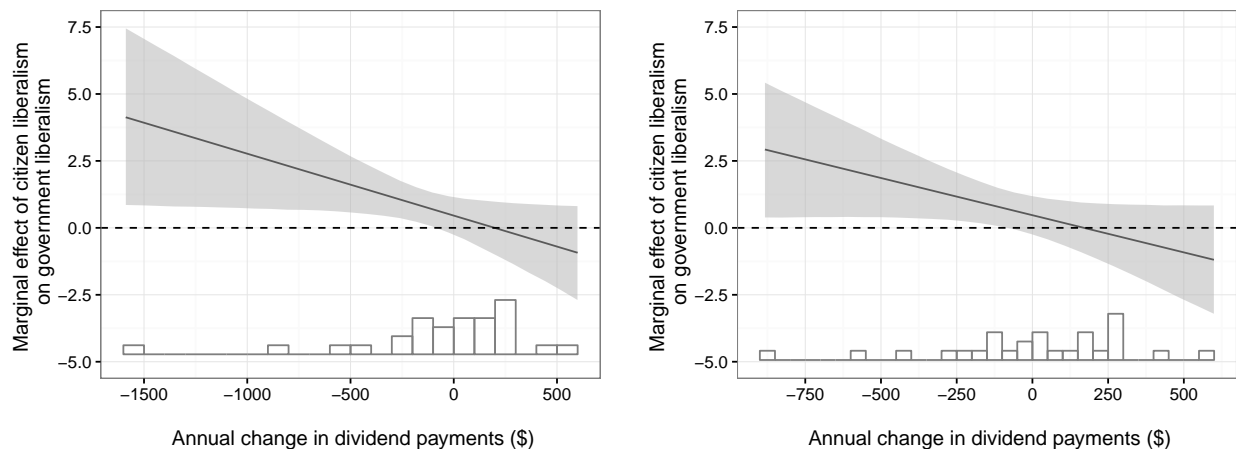
*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

in which dividend payments declined (relative to the prior year) corresponds to a positive and statistically significant relationship between citizen policy preferences and government policy preferences—in other words, positive government responsiveness. On the other hand, a year in which payments increased corresponds to either a zero or negative relationship, one that is not statistically significant—in other words, no (or even negative) government responsiveness.

Consider the year 2002, when the PFD amount paid was \$1,541 (\$1,960 in real 2015 dollars). Compared to 2001, the dividend amount dropped \$310 in nominal dollars (and

Figure 3: Marginal effects of citizen liberalism and annual differences in Alaska Permanent Fund Dividend payments



*Note: left panel includes 1984, when the difference in dividend payments between 1982 and 1983 was  $-\$1,588$  constant 2015 dollars. The right panel excludes 1984.*

$\$448$  in real 2015 dollars) or roughly  $-19\%$  in value. Based on this change (and holding constant both party ID and population, the other covariates in this model), the model predicts that in 2003 a one standard deviation change in citizen policy liberalism would correspond to a change in government policy liberalism of 0.75—right about what the models in Table 1 predicted for the pre-1980 years of government responsiveness. But in years that follow positive changes in the PFD amount, government responsiveness is estimated to be statistically indistinguishable from zero. These results hold even if we discard the potential outlier of 1984, the year following the largest drop-off in the PFD amount to date, from the inaugural  $\$1,000$  ( $\$2,527$  in real dollars) in 1982 to  $\$386$  ( $\$939$  in real dollars) in 1983.

These findings not only support the claims made in H3, but also provide an initial explanation for the dropoff in the magnitude of the effect of the loss of taxation on government responsiveness in the long term (see Figure A5). In every year since 1984, dividend payment amounts were greater in real terms than in the preceding year, before declining for the first time in 1991 ( $\$1,588$  compared to  $\$1,703$  in 1990) and again in 1992 ( $\$1,506$ ). This decline may have prompted a temporary restoration in government responsiveness in the mid 1990s,

after a trying period in terms of both citizen frustration with declining PFD amounts and the fiscal swoon in the state treasury following prolonged years of low oil prices—and thus lower petroleum tax receipts—beginning with the OPEC glut of 1986.<sup>33</sup> Indeed, this finding directly connects with broader claims of the political resource curse whereby as the price of oil sinks lower, the more resilient is representative government.<sup>34</sup>

## 6 Discussion: Cases of responsiveness over time

We would expect the loss of responsiveness across a number of different settings: the government may change policies without any shift in public opinion, it may maintain the status quo despite public demands for change, or it may enact policies that run counter to shifting public opinion. In contrast, we expect responsiveness when the government changes policies in the direction of changing public opinion, or it may keep the status quo when public opinion remains unchanged. To illustrate examples of both responsiveness and non-responsiveness, I briefly discuss four specific policies: two before the income tax repeal in 1980 and two afterwards.

From 1966 to 1974, Alaskan public opinion on social issues first grew more liberal before turning more conservative thereafter (Caughey and Warshaw, 2015a). Opinions on abortion, in particular, shifted to a more liberal stance in the late 1960s, and the state legislature responded by legalizing abortion in 1970—three years before *Roe v. Wade*.<sup>35</sup> Similarly, in 1972 both chambers of the legislature amended the state constitution to protect personal privacy,<sup>36</sup> an amendment that was evoked in 1975 when the Alaska Supreme Court upheld

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<sup>33</sup>Michael Lev, “As Oil Bounty Drains, Alaska Becomes Uneasy” *The New York Times* 29 May 1990, accessed 19 August 2016 from <http://search.proquest.com/docview/108571518>.

<sup>34</sup>This is a stylized adaptation of the oft-cited “first law of petropolitics,” as popularized by the journalist Thomas Freidman in 2009, wherein the “price of oil and the pace of freedom always move in opposite directions.” See <http://foreignpolicy.com/2009/10/16/the-first-law-of-petropolitics/>, accessed 15 August 2016.

<sup>35</sup>Alaska Statute 18.16.010. Three other states legalized abortion in 1970: Hawaii, New York, and Washington.

<sup>36</sup>Alaska Constitution, Article 1 §22.

an individual’s right to possess and use small amounts of marijuana.<sup>37</sup> One week after the ruling, on June 5, 1975, the state legislature decriminalized marijuana, making Alaska the first state to do so.<sup>38</sup>

As the public shifted precipitously towards conservative preferences on social policies—by 1980 reaching their most conservative level in the 1963–1990 period (Caughey and Warshaw, 2015a)—state leaders failed to respond by continuing to implement liberal policies. Consider the state’s enactment of a ban on hate crimes in 1982. Under this law, individuals committing hate crimes would be subject to increased felony sentences above and beyond those for conventional assault.<sup>39</sup> Alaska’s legislature implemented the law after the Anti-Defamation League drafted model legislation for all states to adopt in 1981—and in doing so became one of only a handful of states to enact targeted hate crime statutes within one year of the ADL announcement. This kind of “policy enhancement” (Jeness and Grattet, 2001) was decidedly more liberal than the existing framework, but came at a time when public opinion on such social policies was becoming ever-more conservative.

The state’s protection of gay rights similarly illustrates the legislature’s incongruence with public opinion after the income tax repeal in 1980. In 1962, the state passed a ban on male homosexual sex and maintained anti-gay policies throughout the 1970s. After the U.S. Supreme Court ruling in *Doe v. Commonwealth Attorney of Richmond* striking down Virginia’s sodomy ban due to a violation of personal privacy rights, Alaska’s lower house repealed its own sodomy ban in 1980.<sup>40</sup> This non-representation of socially conservative public opinion would persist through the 2000s, as Alaska’s gay rights laws remained one of the least publicly congruent policies across all 50 states (Lax and Phillips, 2009, 375).

These four policies—legalizing abortion, decriminalizing marijuana, banning hate crimes, and repealing the sodomy ban—illustrate instances of both government response and non-

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<sup>37</sup>*Ravin v. State*, 537 P.2d 494, 496.

<sup>38</sup>Alaska Act of 1975 §1, ch. 110, 2.

<sup>39</sup>Alaska Statute 12.55.155(c)(22).

<sup>40</sup>ACLU, (2003), “History of Sodomy Laws and the Strategy that Led Up to Today’s Decision [in *Lawrence v. Texas*] (June 16, 2003)”, accessed from <https://www.aclu.org/other/history-sodomy-laws-and-strategy-led-todays-decision>.

response to shifts in public opinion. The enactment of liberal policies in the early 1970s and the brief period of fiscally conservative policies in the late 1970s (notably the repeal of state income taxes) correspond with the statistical findings above that the pre-1980 period was largely one of government responsiveness. After the income tax repeal, legislators returned to liberal policies at a time when public opinion steadily grew more socially conservative. Indeed, in sharp contrast to its conservative citizens, Alaska's state policies of punishing hate crimes and defending gay rights in the 1980s resembled those of staunchly liberal California, Massachusetts, and Washington.

## 7 Conclusion

Answering whether the absence of taxation leads to a lack of representation remains a critical puzzle in the study of natural resource politics in particular and comparative political economy in general. In the context of Alaskan state politics, I show direct evidence that the decision to repeal state taxes prompted a decline in government responsiveness, as measured by whether changes in citizen preferences cause changes in government policies. In addition, results using exogenous shifts in the dollar amount Alaskans receive each year from the PFD suggest that government responsiveness is further hampered by increasing oil-to-cash transfers.

These findings offer evidence supporting microfoundations of the political resource curse even in the context of an advanced, long-established democracy. Specifically, my results shed light on the initial steps leading up to the failure of democracy—by breaking down the responsiveness of leaders to their citizens' preferences—in the context of resource-reliant countries. While we do not expect the state of Alaska to succumb to dictatorship, the loss of government representation as a consequence of natural resource wealth is troubling, especially when compared to the pre-1980 period of government policies in line with changing citizen preferences. Conceptually, these findings indicate the need for more research by scholars

debating the veracity of the resource curse theory to focus on more precise constructs of representation, such as dynamic responsiveness. This is all the more relevant given the inherent complexities in trying to explain broad outcomes such as democratization and the endurance of non-democratic institutions solely on the basis of the presence or absence of resource wealth. Moreover, this study emphasizes the leadership component of the taxation-representation relationship. This is especially important given the turning focus in current work on individual citizen behavior, while largely abandoning the agency of state actors.

Finally, this study provides clear policy implications based on my evaluation of the PFD program. In particular, while this paper has not analyzed the welfare-enhancing effects or economic impact of the dividend payment (see [Goldsmith, 2002](#); [Hsieh, 2003](#); [McBeath et al., 2008](#); [Moss, Lambert and Majerowicz, 2015](#)), the results highlight the negative political effects of these payments. Yet in periods of low dividend payment amounts, as in the 1990s and mid 2000s, I find the deleterious effects of the PFD on government responsiveness were diminished. This suggests that states and countries considering oil-to-cash policies should be mindful of the relative amount of these payments; indeed, subsistence-level transfers may offer worse political consequences than transfers of smaller amounts. Still, the overall negative effects on government representation of the Alaska Permanent Fund Dividend should not be under-appreciated. That this can happen even in an advanced, developed democracy such as the United States suggests great caution with how oil transfers will be implemented in developing democracies such as Brazil, Nigeria, and Indonesia, or in transitional systems such as Iraq, Myanmar, and South Sudan.



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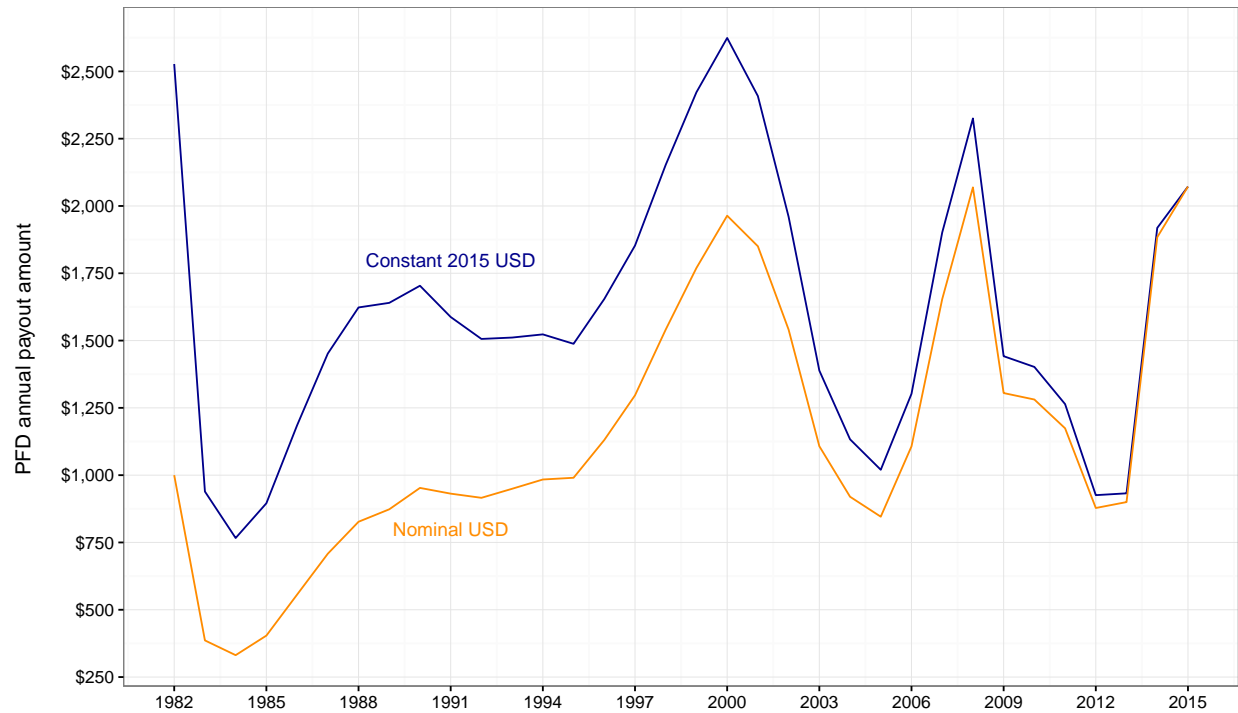
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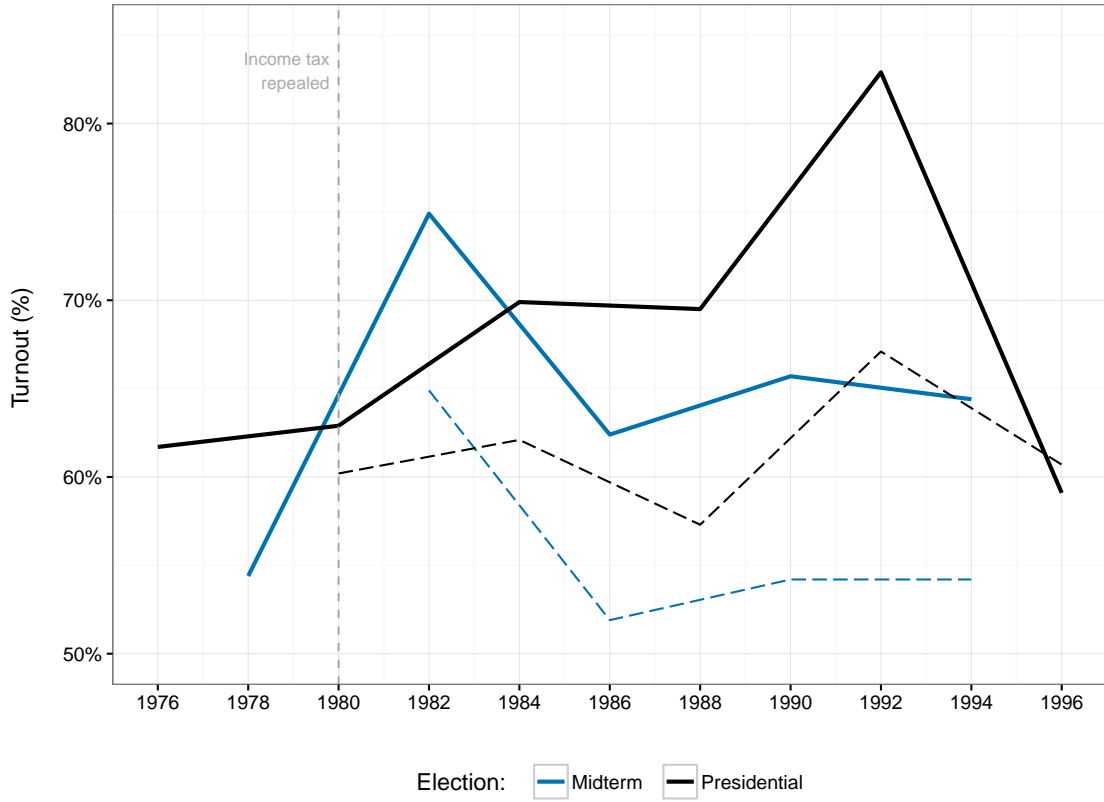
## Appendix 1: Supplementary Figures and Tables

Figure A1: Annual payment amounts of the Alaska Permanent Fund Dividend: 1982–2015.



*Note: after the first payout of \$1,000 rolled out between June and December 1982, PFD amounts are typically paid out to Alaskans between September and November of each year. Conversions from nominal to real dollars are estimated using CPI figures from the Federal Reserve Economic Database.*

Figure A2: Turnout in Alaskan elections, 1976–1996.



*Note: Dashed lines represent turnout as a percentage of voting-eligible population, solid lines correspond to turnout as a percentage of registered voters.*

Table A1: Taxation and Responsiveness in Alaska, short-term effects: robustness to different time windows

	<i>Dependent variable:</i>			
	Government policy liberalism			
	(1)	(2)	(3)	(4)
Citizen policy liberalism <sub>t-1</sub>	1.568** (0.631)	1.775** (0.737)	1.656 (0.968)	2.131 (1.719)
Citizen policy liberalism <sub>t-1</sub> × Post-1980	-1.770*** (0.565)	-1.862** (0.597)	-1.796** (0.704)	-1.963* (0.965)
Constant	0.704*** (0.047)	0.723*** (0.063)	0.711*** (0.094)	0.773** (0.196)
Years included:	1974–1987	1975–1986	1976–1985	1977–1984
Observations	14	12	10	8
R <sup>2</sup>	0.476	0.524	0.507	0.553
Adjusted R <sup>2</sup>	0.381	0.418	0.366	0.374

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table A2: Taxation and Responsiveness in Alaska, long-term effects

	<i>Dependent variable:</i>				
	Government policy liberalism				
	(1)	(2)	(3)	(4)	(5)
Citizen policy liberalism <sub>t-1</sub>	0.586* (0.314)	1.558 (0.897)	-0.395 (0.284)	0.627 (0.526)	1.771** (0.694)
Constant	0.572*** (0.038)	0.714*** (0.079)	0.650*** (0.045)	0.668*** (0.072)	0.401*** (0.064)
Years included:	1973–2012	1973–1980	1981–1990	1991–2000	2001–2012
Observations	40	8	10	10	12
R <sup>2</sup>	0.084	0.334	0.195	0.151	0.394
Adjusted R <sup>2</sup>	0.060	0.223	0.094	0.045	0.334

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Since 2000, there has been a rise in government responsiveness as state policies have become more and more conservative (see the trend in Figure A5), in line with the conservative preferences of Alaskan voters. The tapering-off in long-term effects in Table A2 (see also Figure A11) could be the result of a prolonged period of low dividend payments in the early 1990s, as discussed above, and again in the mid-2000s. But we might also expect long-term effects to dissipate because of shifting expectations: over time, households would see the PFD as a regular, consistent lump sum payment each and every year. Wages may also have shifted such that Alaskan workers are earning less over time as employers can expect that roughly \$1,000-\$2,000 per year will be picked up by the PFD, and that no amount of take-home wages will be withheld by state income taxes. Politically, youths whose parents have not paid income taxes in their lifetimes became eligible to vote as of 1998, and youths receiving annual PFD payments since birth became eligible to vote as of 2000. With the PFD as a constant occurrence in their lives, young Alaskans perceive the PFD as an entitlement rather a transfer of wealth from the government, and thus maintain little association between the PFD and the state government in general (Goldsmith, 2002, 12–13). These pathways suggest that any effects beyond the first 15 to 20 years of the program and the elimination of taxes are only residuals of the mechanisms I hypothesized in section 2.1. Hence, there are likely other factors affecting the rise of government responsiveness, such as restrictions on campaign contributions (In 1996, Alaska adopted a campaign finance reform law banning business and union contributions and capping individual contributions at \$500). (La Raja and Schaffner, 2014) or efforts to improve direct democracy through ballot initiatives (Gerber, 1996). The investigation of these mechanisms for the presence of any long-term effects is a topic I leave for future research.

## Appendix 2: Results using the synthetic control method

The synthetic control method is a statistical extension of Mill’s Method of Difference, whereby the selection of counterfactual states is estimated based on the degree to which these units (referred to as the “donor pool”) are similar to the affected state prior to the intervention. The key distinguishing feature of this method is that, rather than relying on single comparison state, a combination of comparison states is estimated to better reproduce the characteristics of Alaska. This combination, which is referred to as the synthetic control (Abadie and Gardeazabal, 2003), is estimated as  $\sum_{j=2}^{50} w_j * Y_{jt}$ , where  $w_j$  is the weight for each state  $j$  which we use to compare to Alaska,<sup>41</sup> and  $Y_{jt}$  is the outcome (*government policy liberalism*) for state  $j$  in year  $t$ . The synthetic control is thus the weighted average of all states, with greater weight given to states that closely resemble Alaska along a set of given characteristics.

Specifically, this weight is optimized to minimize the difference between Alaska and a state in the donor pool on a number of covariates (listed above) in the pre-treatment period. Each of these covariates is itself assigned a weight based on how well it predicts government responsiveness. For example, if *proportion Democrat* is a strong predictor of *government policy liberalism*, it will be assigned a higher weight than, for example, *population density*. In this example, states that closely resemble Alaska’s presidential vote share in the pre-treatment period are given greater weights in the estimation of a “synthetic Alaska.”

The accuracy of the synthetic control can be assessed based on how well it matches Alaska’s *government policy liberalism* in the pre-1980 period. The projection of the synthetic Alaska, in this case up to 15 years after taxes were eliminated, would approximate the counterfactual had Alaska not abolished taxes in 1980. The difference between Alaska and its projected synthetic control then gives an estimate of the average treatment effect (ATE) on the treated (Abadie, Diamond and Hainmueller, 2015), provided that both Alaska and the synthetic Alaska follow similar trends over time based on a host of the same factors,

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<sup>41</sup>Note that  $j = 1$  represents Alaska.

Table A3: Mean characteristics before elimination of taxes

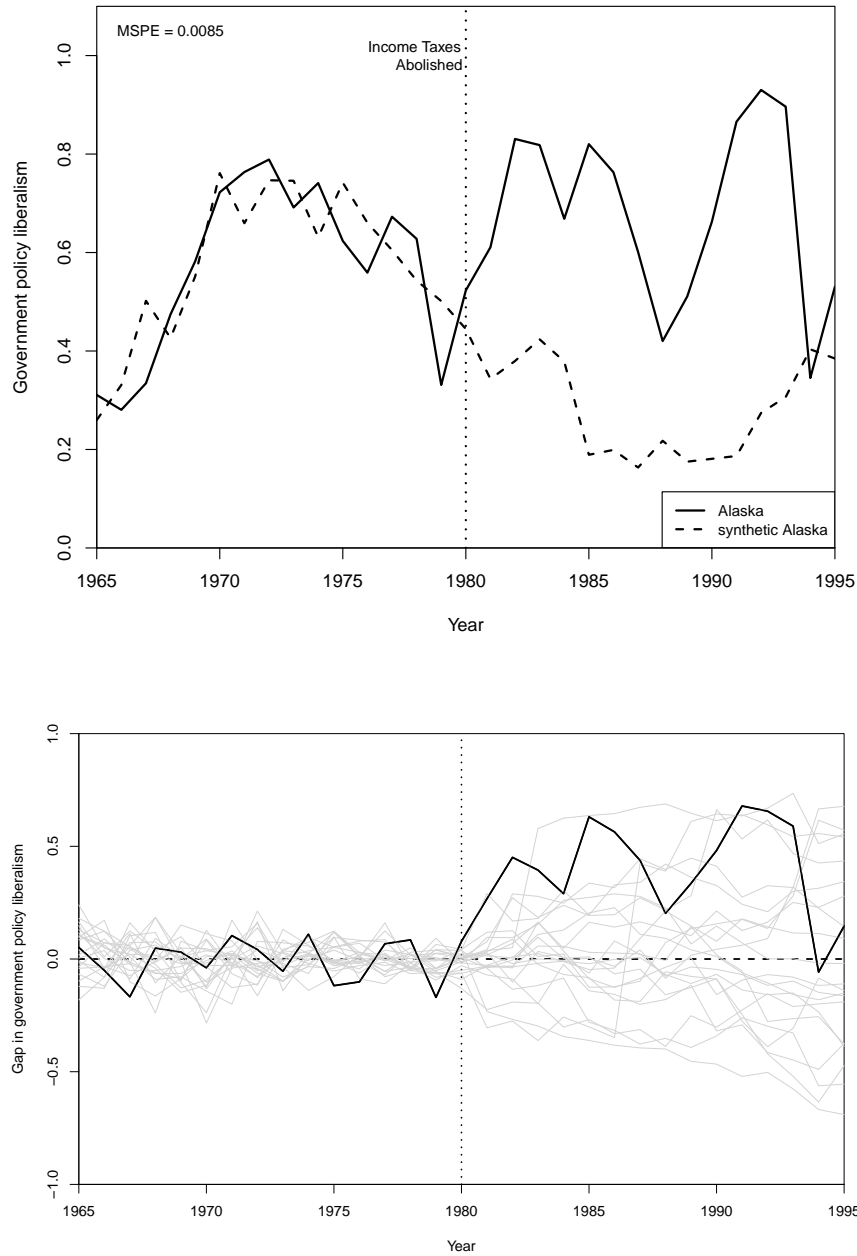
	<b>Alaska</b>	<b>Synthetic Alaska</b>	<b>All US states</b>
Oil as percentage of GDP	0.14	0.08	0.02
GDP growth	0.14	0.06	0.04
Logged GDP per capita	11.18	10.53	10.41
Population density	0.64	76.99	147.23
Logged population	12.83	14.03	14.84
Lagged citizen policy liberalism	-0.08	0.14	0.10
Percentage Native American	0.16	0.04	0.01
Proportion Democrat	0.36	0.41	0.43
Government policy liberalism <sub>1965–1970</sub>	0.45	0.45	0.02
Government policy liberalism <sub>1971–1975</sub>	0.72	0.67	0.07
Government policy liberalism <sub>1976–1980</sub>	0.54	0.56	0.06

except for the elimination of taxes in the former.

In Table A3, I examine the pre-treatment characteristics of Alaska compared to those of synthetic Alaska. The synthetic Alaska looks very much like Alaska with the exception of two matched variables: population density and percentage of Native American residents. This is to be expected given that Alaska is at the extreme of each category, with only 0.6 residents per square mile (the next closest are Wyoming at 4.1 and Montana at 5.1) and upwards of 16% of its residents are Native Americans (the next closest are New Mexico at 9% and Oklahoma at 8%).

The main text describes models with all covariates listed in Table A3 included as control variables that are used to construct the synthetic Alaska. Here I present a simpler model that includes only lagged *citizen policy preferences* plus the pre-treatment outcome as covariates in the synthetic control. The results, shown in Figure A3, show a reasonable fit in the training period, followed by a large gap between Alaska and its synthetic counterfactual all the way up to 1994 when the two trends intersect (as compared to the effect hitting zero in 1987 in the more comprehensive model).

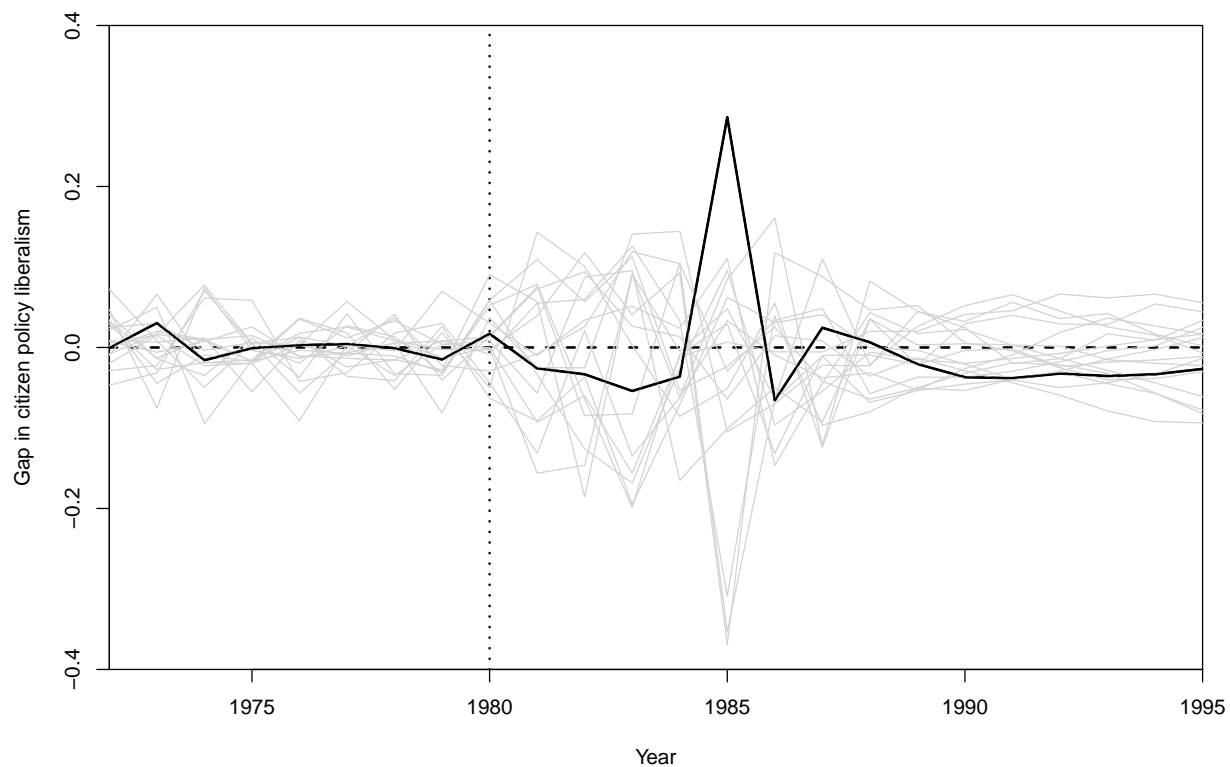
Figure A3: Synthetic control, treated plus placebo groups: Government policy liberalism gaps in Alaska and control states.



*Note: Top figure corresponds to synthetic control model corresponds to model with pre-intervention period matched only on pre-1980 government policy liberalism and lagged citizen policy liberalism. Bottom panel corresponds to average treatment effect estimates along with placebo average treatment effects. Control states in the placebo (and denoted using gray lines) are composed of any of the 49 states with MSPEs less than or equal to the MSPE for Alaska.*

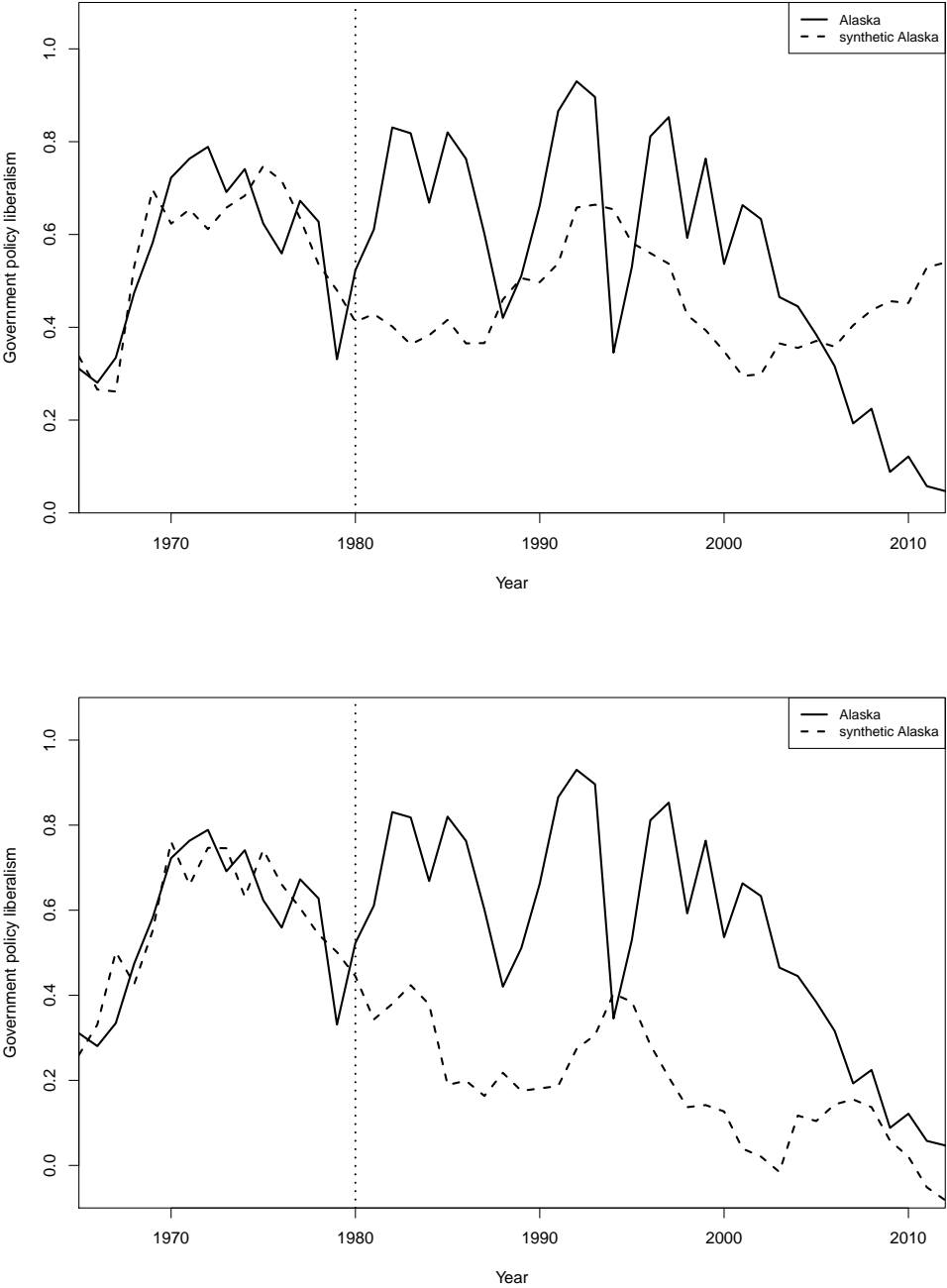


Figure A4: Synthetic control, treated plus placebo groups: Citizen policy liberalism gaps in Alaska and control states.



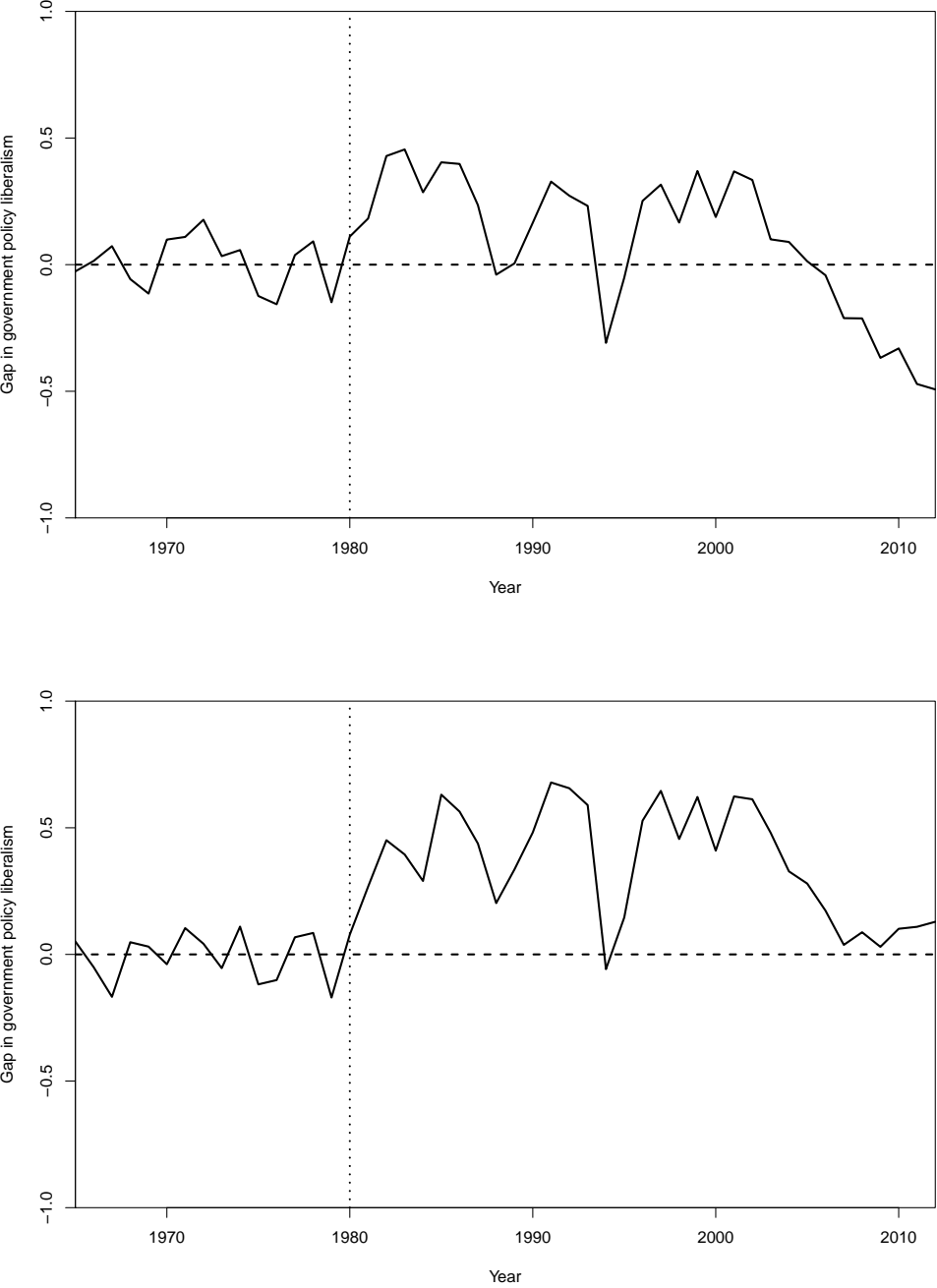
*Note: This list includes all states with MSPEs at most ten times greater compared to the MSPE for Alaska. Compare to Figure 2.*

Figure A5: Government policy liberalism in Alaska versus synthetic Alaska, long-term effects.



*Note: Top figure corresponds to synthetic control model with pre-intervention period matched on all included covariates, bottom figure corresponds to model with pre-intervention period matched only on pre-1980 government policy liberalism and lagged citizen policy liberalism.*

Figure A6: Government policy liberalism gaps in Alaska versus synthetic Alaska, long-term effects.



*Note: Top figure corresponds to synthetic control model with pre-intervention period matched on all included covariates, bottom figure corresponds to model with pre-intervention period matched only on pre-1980 government policy liberalism and lagged citizen policy liberalism.*

### Appendix 3: Alaska versus synthetic Alaska, state-citizen rank differences

Here I discuss results from an analysis where I compare the rank of Alaska among all 50 states in terms of how liberal government policies are in a given year to the rank in terms of how liberal citizen preferences are in the prior year. For example, in 1990 Alaska's government policies were the 17th most liberal (between Pennsylvania and Maine), while its citizens' preferences ranked 45th most liberal (between Oklahoma and Nebraska); the *rank difference* for 1990 would be 28. The greater this number, the less responsive is the government to its citizens.<sup>42</sup>

Measuring responsiveness using the metric of differences in rank between state and citizen policy liberalism provides similar, albeit stronger, results of government representation with the synthetic control method. Matching on the same set of controls, but with *rank difference* as the outcome variable, gives a synthetic mix of Oklahoma (0.412), Louisiana (0.364), Wyoming (0.133), and Montana (0.092), with all other states at 0. This combination of states is intuitively more reasonable than in the prior analysis, given that all four states are resource-rich and made up of predominantly conservative voters (unlike Hawaii and New Mexico above).

Figure A7 displays the *rank difference* for Alaska and synthetic Alaska, here using a window of 1973–1995 given the lack of data on lagged *citizen policy liberalism* prior to 1973. The trends for the synthetic Alaska are broadly in line with arguments that states are becoming more dynamically responsive to their citizens after the 1970s (Erikson, Wright and McIver, 1993; Burstein, 2003; Caughey and Warshaw, 2016). The results suggest that were Alaska not to abolish taxes (nor to begin direct cash transfers), then the difference in rank between how liberal its government is and how liberal its citizens are would have

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<sup>42</sup>This requires a strong assumption, however, that the two are scaled approximately within the same range of preferences. Such an assumption would be violated, for instance, if the least liberal citizen preference was still greater than the most conservative government policy. See Tausanovitch and Lewis (2015) for a discussion of the assumptions required for such joint scaling.

shrunk from 23 rank-units in 1980 to 16 rank-units by 1995. Again, we can infer that this gap is amplified by Alaska’s citizens becoming ever more conservative over time (in line with changes in citizen preferences in synthetic Alaska), while its state government continued enacting relatively liberal policies.

The effect of the loss of taxation on government responsiveness over time is plotted in Figure A8. In contrast to the above results, the effect persists throughout the 1981-1995 period, and is consistently between 6 and 18 rank-units in magnitude after 1981. To evaluate the credibility of these results, [Abadie, Diamond and Hainmueller \(2010\)](#) suggest conducting placebo studies that assign the tax-elimination treatment to states in the control group.<sup>43</sup> A large effect for each of these states would reduce the confidence in the Alaska finding since indeed none of these states abolished taxes in 1980. I conduct this placebo study for the top resource-rich states prior to 1980, according to estimates from the United States Geological Survey, by assigning each one to be in the treatment group and all other US states (except Alaska) in the synthetic donor pool. The results from the top 15 resource-rich states are plotted as dark gray lines in Figure A8, indicating that the Alaska estimated gap in rank differences is unusually large relative to the distribution of rank difference gaps. The probability of estimating a gap as large as Alaska’s, when compared to the distribution of gaps for a random permutation of the intervention in 14 states in the donor pool, is less than 7%. If I remove any state with a mean squared prediction error (MSPE)—a diagnostic of how well the synthetic control fits the pre-intervention treated (placebo) unit—greater than four times that of Alaska, the estimated effect is even more unusually pronounced across the post-intervention period (see Figure A10).

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<sup>43</sup>I do not have enough data to conduct a proper “in-time placebo” as suggested by [Abadie, Diamond and Hainmueller \(2015\)](#), whereby the intervention in Alaska is assigned to an earlier year given that the earliest year of availability for *rank difference* is 1973. This issue will be addressed in future drafts once new data become available for the 1965–1973 period for *citizen policy preferences* for all US states. For the time being, I conduct an in-time placebo where I assign the treatment to 1978 (the earliest year that allows for estimation of the pre-treatment synthetic match). The results, presented in Figure A9, show that the average treatment effect does not surpass the training period margin of error until the actual treatment year of 1980.

Figure A7: Trends in rank difference between state-citizen policy preferences: Alaska versus synthetic Alaska.

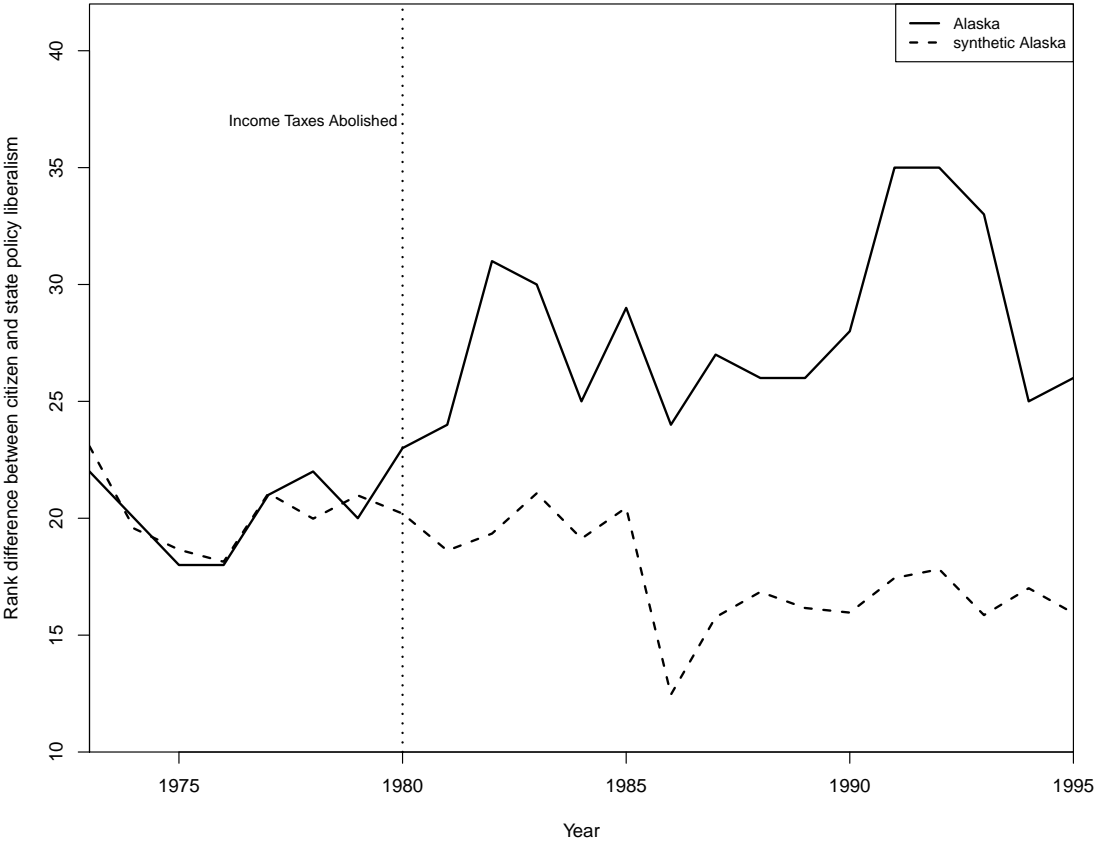
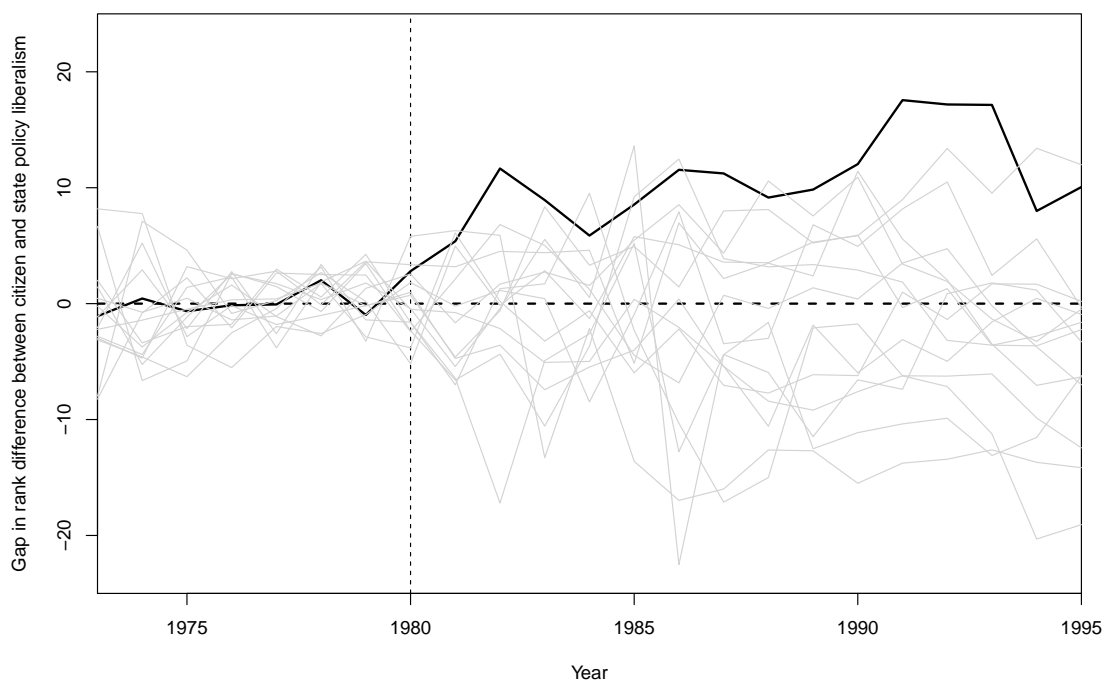
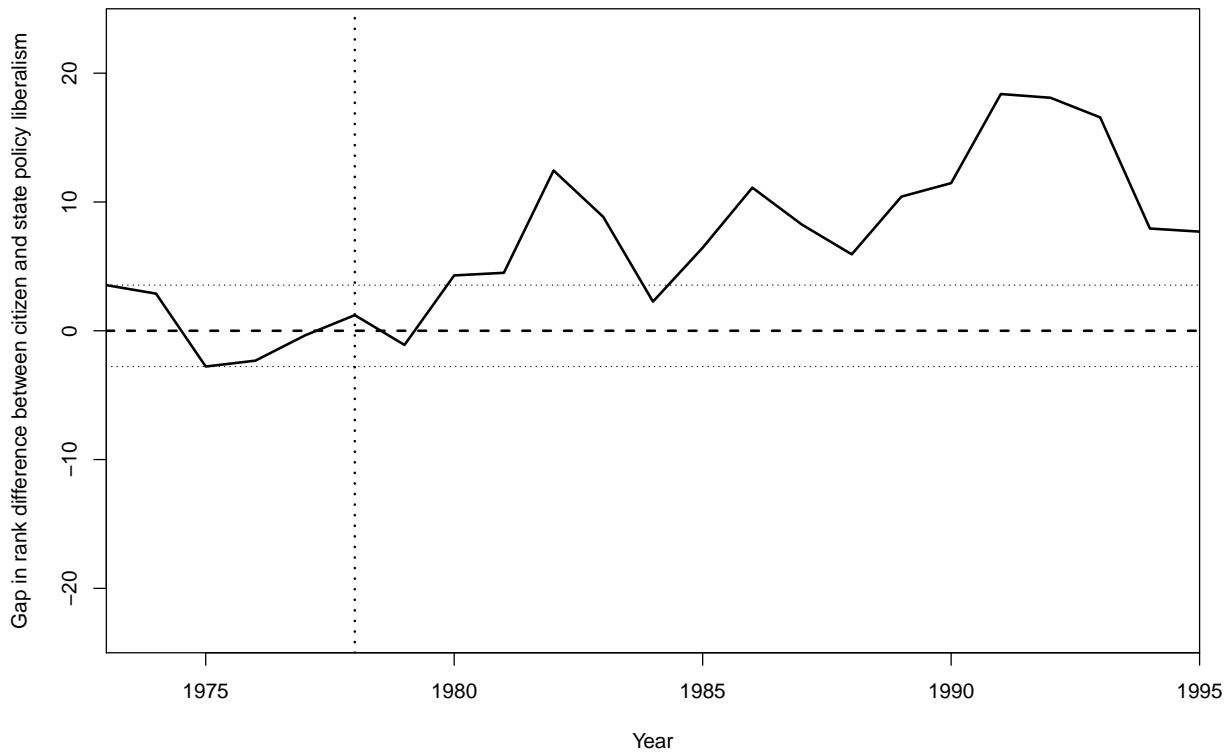


Figure A8: Synthetic control, treated plus placebo groups: State-citizen policy liberalism rank difference gaps in Alaska and 14 control states.



*Note: Control states are chosen from a list of states with the highest per capita natural resource wealth prior to 1980. This list includes, in order of resource wealth: Wyoming, Louisiana, New Mexico, West Virginia, Texas, Oklahoma, Kentucky, Montana, Utah, Arizona, Kansas, Colorado, Nevada, and North Dakota.*

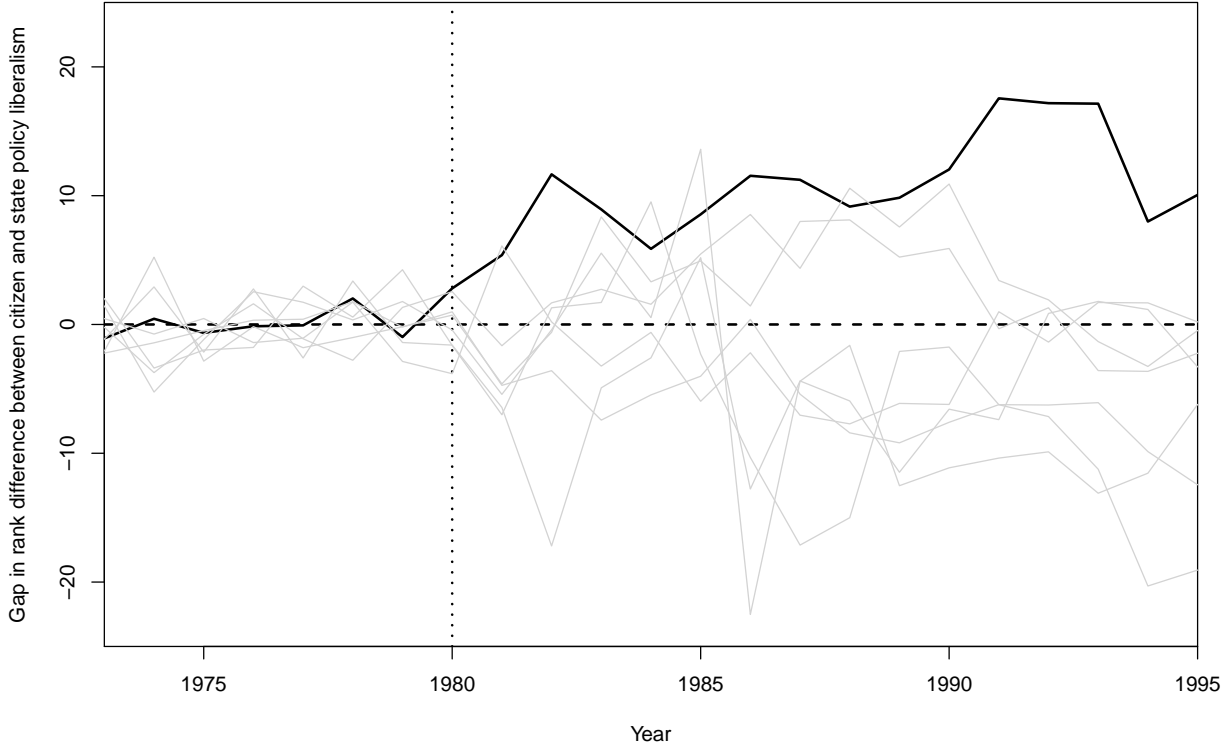
Figure A9: Placebo elimination of taxes in 1978: State-citizen policy liberalism rank difference gaps in Alaska versus synthetic Alaska



*Note: This in-time placebo study assigns the treatment to 1978 instead of the actual intervention assignment in 1980. Given the small sample size prior to the placebo intervention, I plot margins of error of the training period as horizontal dotted lines above and below 0. This follows from the idea that a large root mean squared prediction error in the post-intervention period does not suggest a large treatment effect if the pre-intervention RMPSE is large as well (Abadie, Diamond and Hainmueller, 2015).*

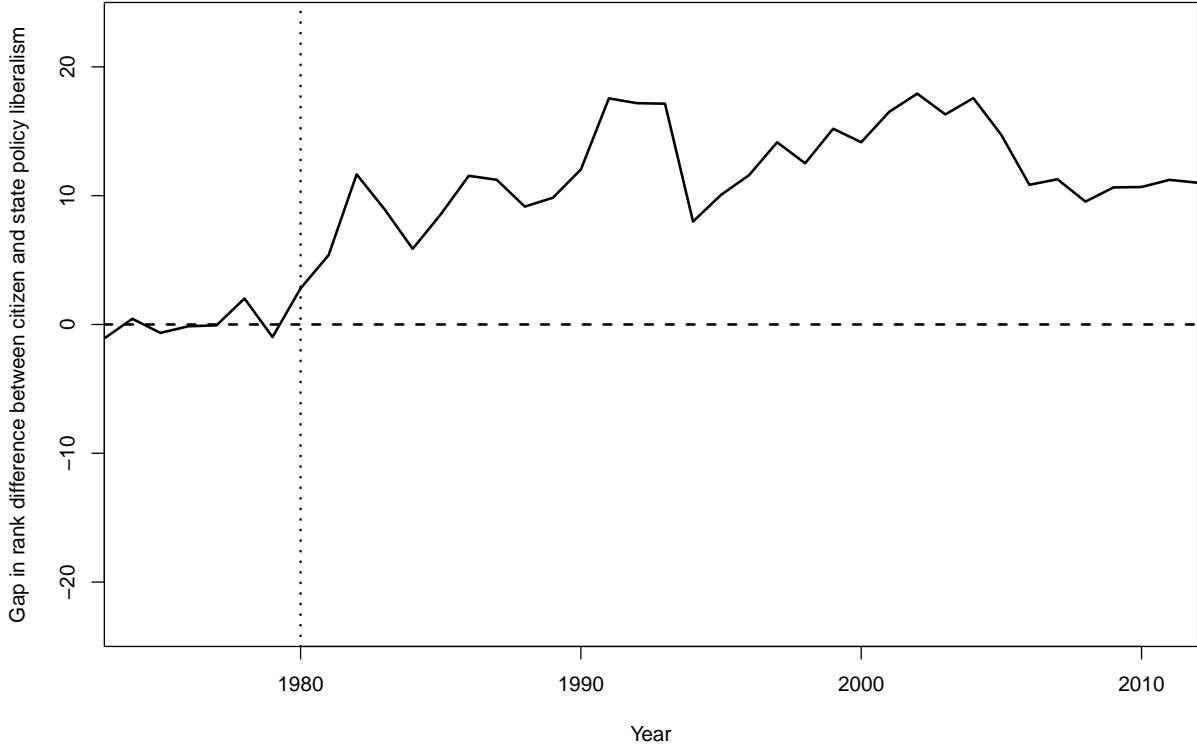


Figure A10: Synthetic control, treated plus placebo groups: State-citizen policy liberalism rank difference gaps in Alaska and control states.



*Note: This list includes, in order of resource wealth: Wyoming, Louisiana, Kentucky, Utah, Colorado, Nevada, and North Dakota, and excludes states with high natural resource wealth but MSPEs four times greater compared to the MSPE for Alaska. Compare to Figure A8.*

Figure A11: State-citizen policy liberalism rank difference gaps in Alaska versus synthetic Alaska, long-term effects.



*Note: Pre-1995 effects are identical to those plotted in Figure A8 in the main text. The synthetic Alaska is estimated using the same exact model but with longer projections; hence synthetic weights all remain the same as in Table A4 in the main text.*

Table A4: Mean characteristics before elimination of taxes, using *rank difference* to measure government responsiveness

	<b>Alaska</b>	<b>Synthetic Alaska</b>	<b>All US states</b>
Oil as percentage of GDP	0.15	0.17	0.02
GDP growth	0.16	0.07	0.03
Logged GDP per capita	11.23	10.51	10.42
Population density	0.65	47.69	147.57
Logged population	12.85	14.61	14.85
Government policy liberalism	0.62	-0.52	0.06
Lagged citizen policy liberalism	-0.08	0.00	0.10
Percentage Native American	0.16	0.04	0.01
Proportion Democrat	0.36	0.39	0.43
Rank difference	20.50	20.21	11.70