Oil Price Volatility and the Rentier Welfare State: Social Policy Institutionalization and Spending Responsiveness

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Abstract

What explains variation in the volatility and procyclicality of social protection spending in oil-producing countries (OPCs)? Theories of the rentier state "spending effect" contributing to regime durability, research on the connections between boom-bust cycles and political crises precipitated by economic distress, and the current efforts of OPCs to manage a new period of low oil prices all indicate the theoretical and practical importance of this question. Empirically, as well, I show that there is wide variation in the extent to which social spending in OPCs is volatile. Using a dataset of 45 OPCs over 1990-2010 and a restricted subset of 25 oil-dependent countries over the same time period, this paper examines the volatility and responsiveness to changes in oil prices of public expenditure on social protection (e.g. various social insurance and assistance benefits, but not health or education spending). I review existing theories of the procyclicality of fiscal policy which find that greater political competition, greater corruption, and weaker state capacity predict greater procyclicality. I theorize the importance of a new variable, social policy institutionalization, in mediating the impact of fluctuations in oil price on social protection spending specifically. In the present paper, I focus only on one component of institutionalization, the codification of policies in law, as a first step toward assessing the plausibility of this approach. I introduce variables that measure the extent to which countries had codified social policies by 1950 (early policies) and the extent of policy codification during years in the period under examination (total policies). I find first that the correlational relationships between all of the political variables and spending volatility are surprisingly weak in the full sample of countries; in regional sub-sets, moreover, I find substantial heterogeneity of the direction of these relationships. Second, I test the relationship between oil price changes and spending changes directly using a fiscal response function that interacts changes in oil price with the political variables of interest. I find support for the importance of political competition, early policies, and total policies in conditioning the effect of changes in oil price on changes in social protection spending in the full sample. In the restricted sample, I find that only political competition, democracy, and early policies condition the effects. I find there is little evidence in either the full or restricted samples that corruption, state extractive capacity, or the level of oil wealth per capita condition these effects. I conclude noting additional steps that I plan to take to extend and test the robustness of these findings.

Introduction

Over the past several years, oil-producing governments from Venezuela to Russia to Saudi Arabia have tightened their belts. Oil prices remain stubbornly low, despite recent agreement among OPEC members to cut production. Observers of these vulnerable governments track every new tax and fee imposed and every new austerity measure announced, wondering what cut might trigger demonstrations or bring down a government. It seems a long time ago—though it was only 4 years—that market analysts wondered if oil prices would remain permanently at $100 a barrel.

Managing oil price fluctuations is a major challenge for governments in oil-producing countries (OPCs), and one they have not yet overcome. "If benevolent accountants instead of politicians ran oil-rich governments," writes Ross (2012), "their economies would be a lot steadier. The failure of oil-funded governments to stabilize their economies is one of the central puzzles of the resource curse" (205). It is a puzzle that remains unresolved, and yet one that appears increasingly important. A growing literature on price volatility argues that it may explain "resource curse" outcomes better than the mere presence of oil. Price volatility leads to procyclical fiscal policy in rentier states, with negative effects on economic growth. Booms might empower autocrats, while busts might threaten political violence and crisis, poverty, or both. Volatility both of prices and spending have thus have significant implications for governance, economic outcomes, and citizen welfare in OPCs.

This revelation is hardly novel. Major prior scholarly works on the rentier state largely focused on the oil price shocks of the 1970s and price collapse of the 1980s and 1990s. Beginning around 2000, oil prices began a sustained increase that (with some blips) lasted for more than a decade, helping governments erase debt, stock up natural resource and sovereign wealth funds, and increase government consumption. Among the projects undertaken during this period in many countries were efforts to expand or reform policies and institutions created earlier, including many that directly affected their citizens' welfare. While the first boom drove state building, the second boom drove states to reform, spend, and save in different ways.[1]

[1]We know relatively little about how distributive systems were reformed during the 2000s compared to what we know about how development models have evolved in the last two decades. For example, in the Middle East and North Africa, home to a large number of OPCs, efforts at economic reform and diversification increased during the

What explains variation in the volatility and procyclicality of social spending in OPCs in this later period? This paper tackles the question of what accounts for governments' varied performance in responding to oil price changes with either countercyclical or procyclical spending. Rather than examining the overall procyclicality of fiscal policy in OPCs (Abbott et al., 2015; Abdih et al., 2010; Alesina et al., 2008; Arezki and Ismail, 2013; El-Anshasy et al., 2015; Erbil, 2011), however, I focus on a sector of spending that most closely captures the link between governments and their citizens: social protection spending. Social protection includes spending on sickness and disability, old age, survivors, and unemployment benefits; child and family allowances; housing; and other forms of social assistance. It does not include spending on health, education, or fuel subsidies (the last being a significant component of the benefits citizens receive in many rentier states, especially in the Middle East and North Africa (Cammett et al., 2015; Hertog, 2017; Jawad, 2013)), though in future work I aim to incorporate examination of trends in these forms of programmatic distribution as well.

Using an original dataset of economic and political variables covering 45 OPCs over 1990-2010, I show that over this period, spending on social protection has been more volatile in OPCs than spending in other sectors. I review existing political theories of procyclical spending that suggest either (a) governments have political incentive to enact procyclical policies, or (b) governments lack the capacity to enact countercyclical policies. I contribute a new argument, that the institutionalization of social policy—measured in this paper by the number of substantive social policy areas in which a country has formal policies—should mediate oil price fluctuations and social spending volatility. I code this variable for all countries in the dataset both in terms of the number of policies present in a country by 1950 (before most countries became oil-wealthy) and as the total number of policies present in a country in any given year in my dataset (1990-2010). I hypothesize that a greater number of total policies in the present acts as a check on procyclical spending by (a) channeling spending through a rules-based system and (b) establishing common expectations

2000s boom, mostly in the Arab Gulf. These efforts have been characterized as reforms introduced by elites who are the agents of change, with some authors speculating that we are beginning to see greater convergence on the "Dubai model" of development (Ehteshami, 2003; Hvidt, 2011; Maloney, 2008). Against this optimism, others have questioned the sustainability of the Dubai model (Davidson, 2008) or highlighted the dilemma that more democratic states in the region (notably Kuwait) face the greatest challenges reforming their systems away from a reliance on oil — because they do face popular pressures to maintain developmental policies (such as discouraging foreign investment or banning alcohol) that thwart Dubai-type strategies (Herb, 2014). These analyses, however, focus more on broad development strategies than on social policies.

about what kinds of spending citizens can expect. I also hypothesize that the early presence of such institutions should have similar and even stronger effects, following from common arguments that the strength of pre-oil institutions in OPCs conditions the negative effects of oil wealth.

I empirically test these hypotheses first by examining the correlational relationships within sets of OPCs between mean values of independent variables that proxy for corruption, political competition, social policy institutionalization, state extractive capacity, and democracy and the volatility (standard deviation) of social protection spending across time. Using this naive approach, I find that only perceptions of corruption and state extractive capacity are significantly related to volatility of social spending, and only in some subsets. The direction of one of these relationships is as theoretically predicted: perceptions of corruption are correlated with higher volatility. Yet I also find that greater extractive capacity is correlated with higher volatility. This likely indicates that a significant component of spending volatility is related to overall business cycle fluctuations and not to oil price volatility (unaccounted for in these simple correlations). Overall, the relationships between all of the political variables and spending volatility are surprisingly weak in the full sample of countries; in regional sub-sets, moreover, I find substantial heterogeneity of the direction of these relationships. This suggests that whatever processes connect oil price and social spending volatility, they are unlikely to be consistent across all cases.

Second, testing the relationship between oil price volatility and spending volatility directly using a fiscal response function that interacts changes in oil price with the political variables of interest, I find that fiscal responsiveness to changes in oil price is not conditional on perceptions of corruption, state extractive capacity, or level of oil wealth. I find support for one of the hypotheses about social policy institutionalization: social protection spending is less responsive to changes in oil price where there are more total polices in the full sample of countries. However, this relationship is not robust in the restricted sample, and I find the opposite effect with respect to early policies: social spending is more responsive where there were more early policies. In addition, I find that social protection spending is more responsive to changes in oil price where political competition is greater—but not necessarily where states are categorized as full democracies rather than authoritarian systems. In fact, I find that measures of political competition and a dichotomous indicator for democracy have opposite effects on spending response. I offer a tentative interpretation of these results: it could be

that early policies proxy for stronger social forces capable of organizing to demand redistribution from governments, either because they were able to achieve early social policies or because the presence of such policies fostered stronger welfare constituencies over time. Political competition in non-democracies may channel demand for distribution to governments that lack the liberal horizontal ties and transparency to assuage citizens that they can expect consistent distribution in the future.

While these results are preliminary pending more extensive robustness checks, they suggest that social policy institutionalization may play an important and under-examined role in how governments manage the fluctuations in revenue that accompany oil price volatility, at least with respect to how this impacts their citizens. More broadly, this suggests a new way forward in examining the causal mechanisms presumed to underpin theories of the resource curse and the rentier state. This paper aims to set the stage for a larger project examining the causes and consequences of variation in social policy across time in OPCs. In concluding, I note several limitations of the present study and ways that potential future research could address them. This study and the broader research agenda it anticipates address calls to expand work on the scope of the resource effect in different policy areas; how different leaders use natural resource rents in different ways; and how international influence on domestic economies changes across booms and busts over time (Cooley, 2001; Morrison, 2011; Ross, 2015). It also addresses the need for more up-to-date comparative political research on boom-and-bust effects across countries. As oil-producing governments currently struggle to adjust to a new era of lower oil prices, this question remains highly relevant.

Motivation and Background

Theoretical, empirical, and practical motivations underpin this study. First, from a theoretical perspective, public goods and social policy have played a central role in theories of how rentier states maintain stability or authoritarianism. The "spending effect" within this theory (Ross, 2001) posits that in combination with not paying taxes, citizens in rentier states are pleased to receive public goods from their leaders, and reward those leaders with some level of political quiescence. Even within democracies, scholars find that external rents upend the normal business cycle of politics:

whereas we might expect support for an incumbent to decline as growth decreases, "the presence of state income generated as an external rent allows political elites to remain in power without regard to the business cycle" (Goldberg et al., 2008, 481). Cross-national statistical analyses support the assertion that oil wealth is associated with less taxation of elites and more social spending or employment of citizens as well as the stability of both democratic and authoritarian regimes (Ahmed, 2012; Bjorvatn and Naghavi, 2011; Dunning, 2008; Morrison, 2009, 2011; Ramsay, 2011). While various works have critiqued the quiescence thesis, noting that rentier state citizens often have grievances and express them, and may even revolt (Herb, 2005; Lowi, 2009; Okruhlik, 1999; Smith, 2007), the focus of these critiques has been on cataloguing and theorizing contentious politics and political crises or stability, rather than the nature of social service or patronage provision itself. In discussions of the effects of oil wealth, then, social spending is a frequently-cited mediating variable, but analysis of social policy configurations and how oil wealth is spent is less often the focus.[2] A closer examination of the causal links between rentier government revenues, spending, policies, and citizen engagement with them is overdue.

Second, empirically, there is a lot to explain. Social protection (henceforth SP) spending in OPCs is volatile. It is the most volatile single category of OPC government spending by percentage, as Figure 1 demonstrates, and among the most volatile categories in terms of per capita spending, as shown in Figure 2. Each figure displays the standard deviation of spending in different sectors on average across 45 OPCs over 1990-2010. The distributions (not shown) are quite similar if I look only at the period 1998-2008, which roughly encompasses the 2000s oil boom and excludes potential direct effects of collapse of communism and the financial crisis. Notably, social protection spending is more volatile than either health or education spending—two categories which also directly affect citizens.

[2]Much of the evidence available on oil- and commodity-boom driven social spending and its impact comes from Latin America. In particular, Venezuela's experience with rentier populism has been framed as an outgrowth of the rise of the "contestatory left" in Latin America, with results evaluated as poor compared to the moderate left (De Luca et al., 2013; Mazzuca, 2013; Weyland et al., 2010). Venezuela's social spending in the 2000s reached levels never before seen, and involved the reversal of austerity and privatization measures passed in the 1990s (Haggard and Kaufman, 2008). Some research suggests effects of commodity boom spending more generally are conditional: for example, Brazil undertook boom-led education spending from 1889-1930, but the increase in spending varied across regions and was correlated with pre-existing levels of inequality (Musacchio et al., 2014). Recent subnational analysis also finds that in Brazil, "oil-rich municipalities experience increases in revenues and report corresponding increases in spending on public goods and services [but that measures of social spending and welfare] increase less (if at all) than one might expect given the higher reported spending" (Caselli and Michaels, 2013).

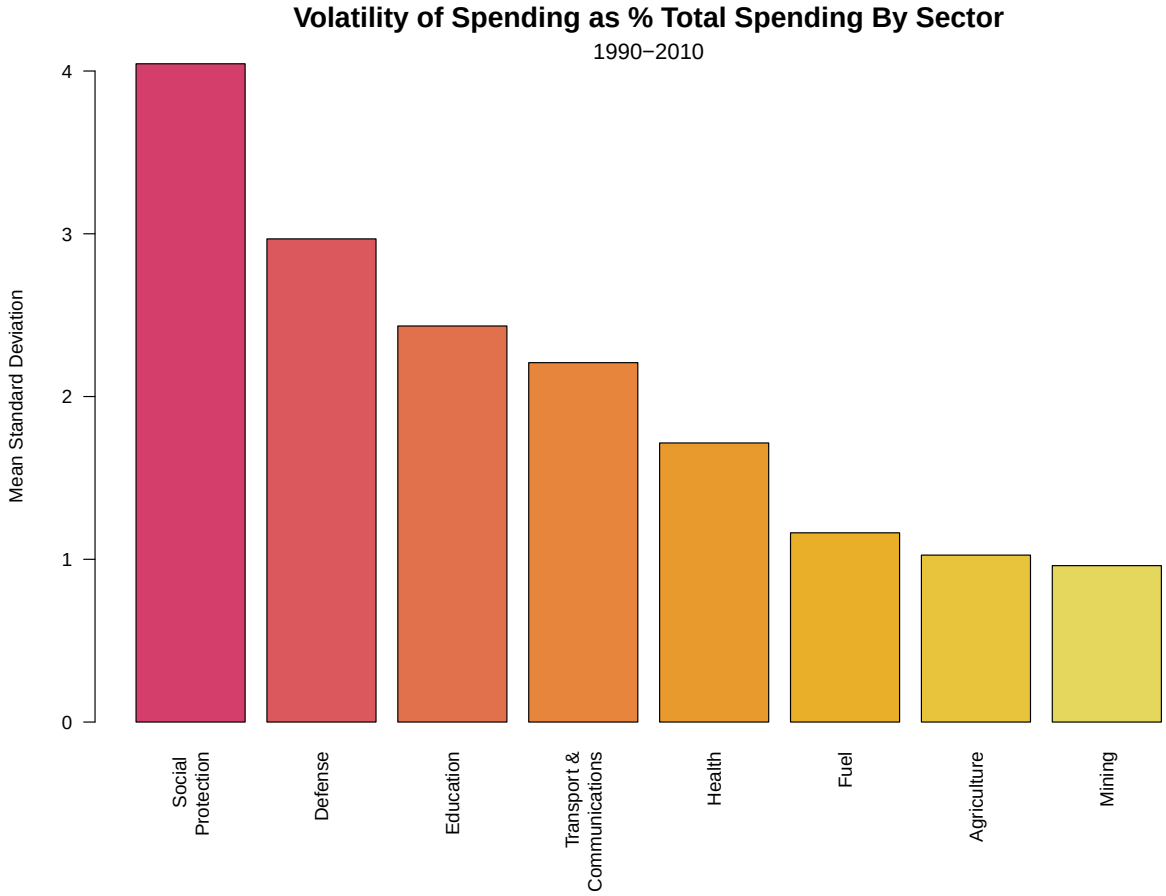

Figure 1: Bars display the average standard deviation of spending by sector. Standard deviations are calculated for each country for each sector, then averaged across countries in the dataset. Calculations by the author with data from Yu et al. (2015).

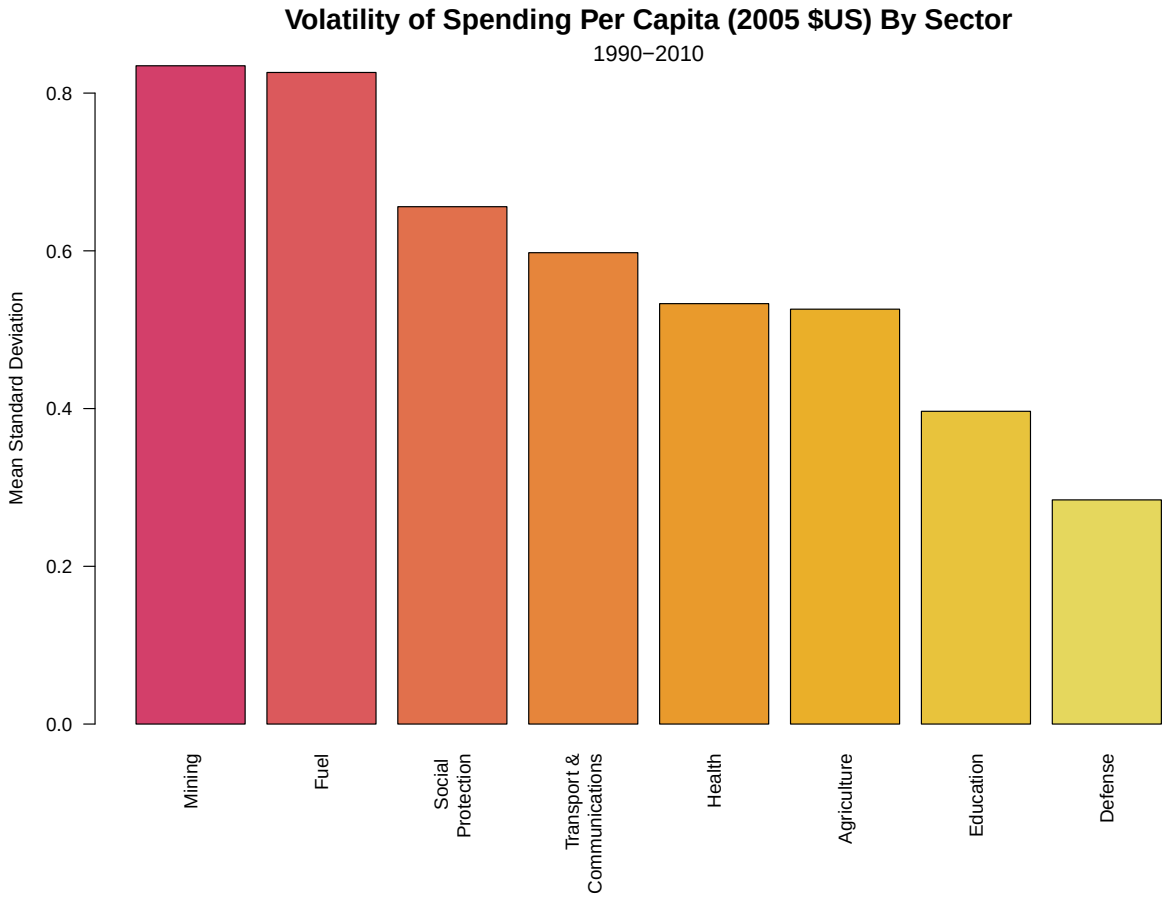

Figure 2: Bars display the average standard deviation of spending by sector. Standard deviations are calculated for each country for each sector, then averaged across countries in the dataset. Calculations by the author with data from Yu et al. (2015).

In addition, this volatility varies substantially across the universe of oil-producing cases (and as I will show below, this variation cannot be explained simply as the result of varying levels of oil rents). Figures 3 and 4 show the standard deviations over 1990-2010 across 45 oil-producing countries of spending as a percent of total government expenditure (Figure 3) and of the log of spending per capita in 2005 purchasing power parity (PPP)-adjusted US dollars (Figure 4).

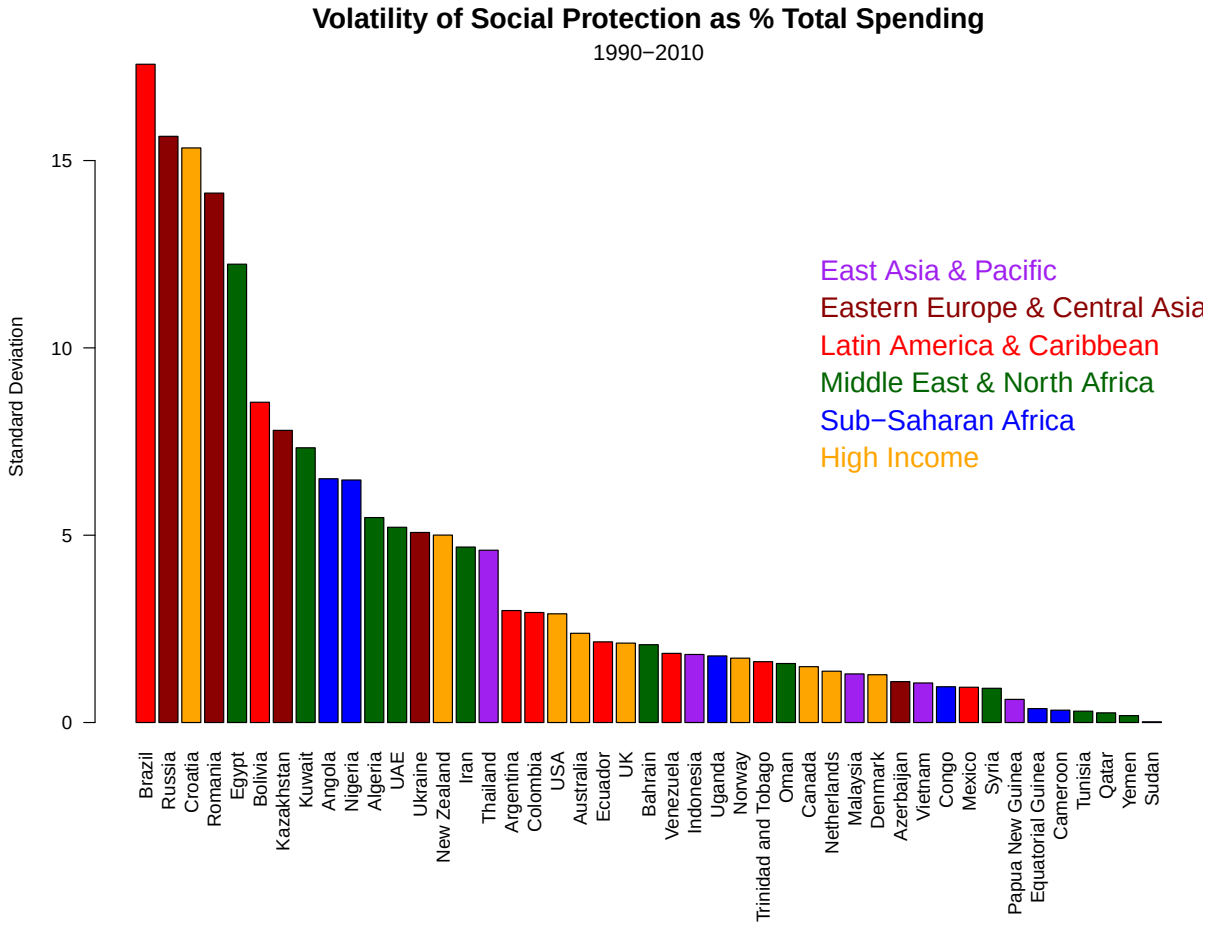

Figure 3: Bars display the standard deviation of social protection spending in each country. Calculations by the author with data from Yu et al. (2015). The "high income" category is a combination of countries from the Eurozone and other OECD countries (Australia, Canada, New Zealand, and the United States), which I pool together for simplicity of presentation.

We can also see that where spending is volatile, it appears at first glance to track fluctuations in oil prices. Figures 5 and 6 demonstrate how this can vary significantly across cases, using four examples from within the same region, the Middle East and North Africa. Figure 5 plots the difference in oil prices year-on-year (YOY) in **green** against the difference in SP spending as a percent of total

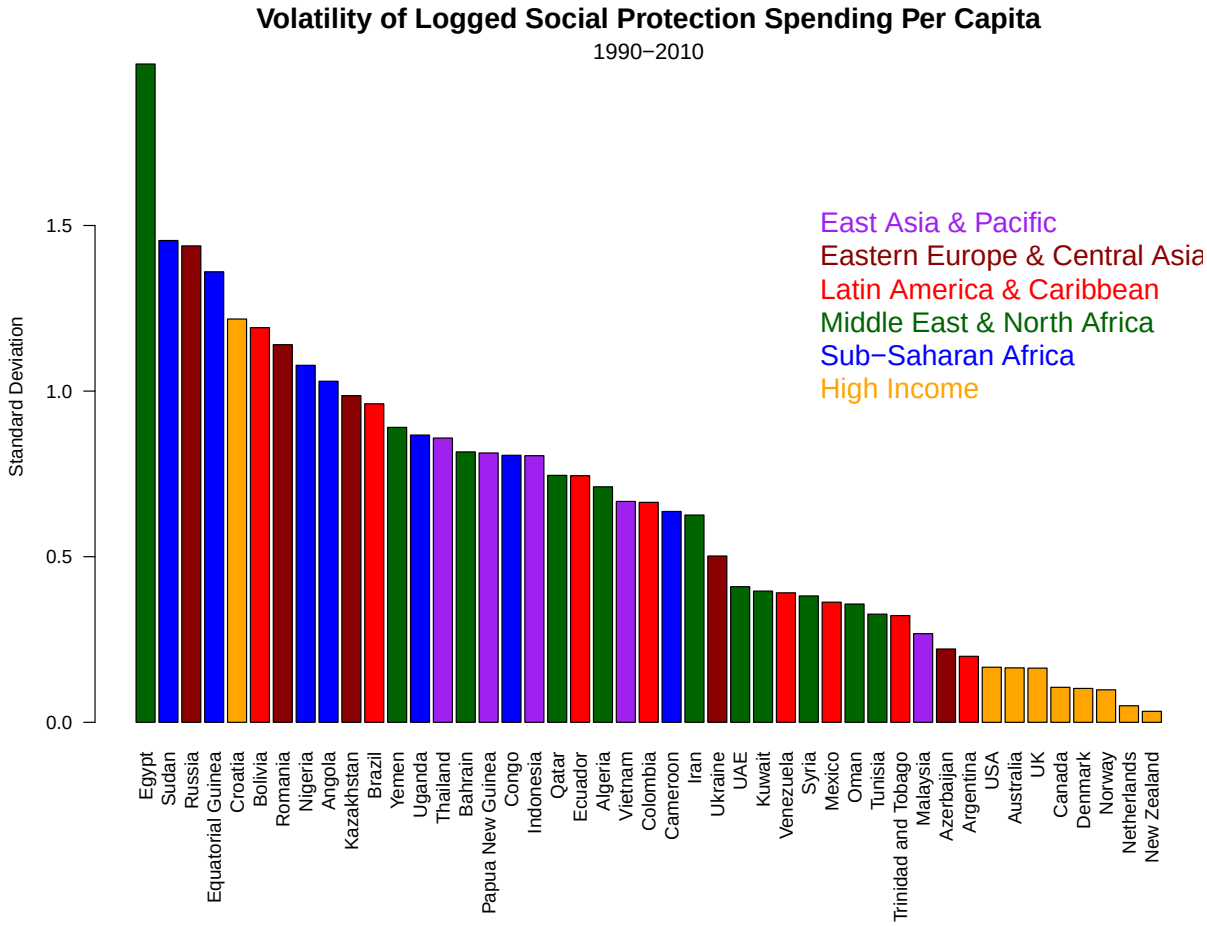

Figure 4: Bars display the standard deviation of social protection spending in each country. Calculations by the author with data from Yu et al. (2015). The "high income" category is a combination of countries from the Eurozone and other OECD countries (Australia, Canada, New Zealand, and the United States), which I pool together for simplicity of presentation.

spending YOY in **red**. Figure 6 does the same, but with the log of SP spending per capita in red. I present the trends for Algeria, Bahrain, Iran, and Kuwait. In these examples, Algeria and Bahrain clearly present less volatile spending patterns, while Iran and Kuwait demonstrate more volatility in terms of the percent of government expenditure spent on SP and, for Kuwait, the per capital expenditure on SP.

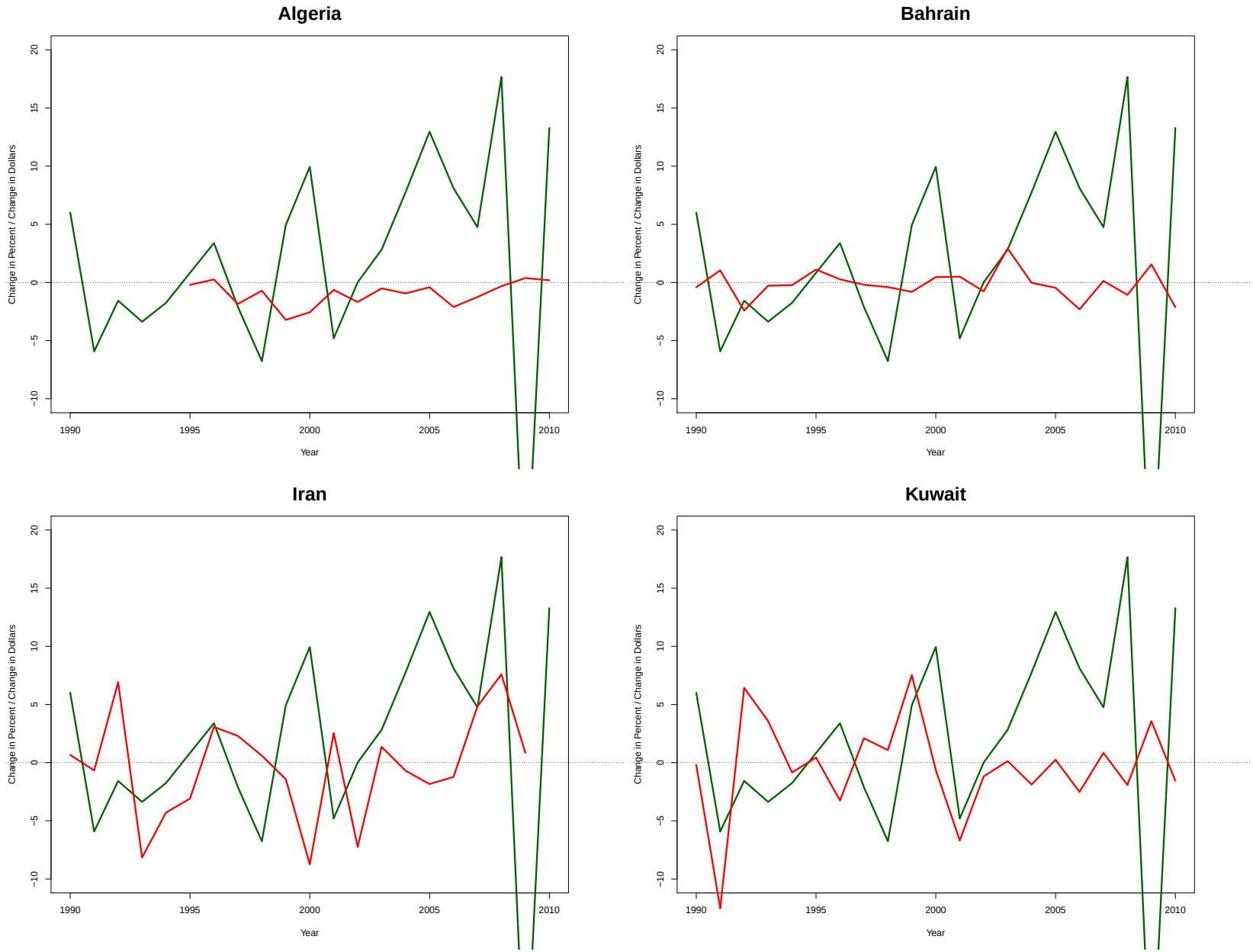

Figure 5: Changes in oil price (green) against changes in social protection spending as a percentage of total government spending (red). Oil price data are from Ross-Mahdavi (2014), and spending data are from Yu et al. (2015). Data for Algeria are only available from 1994 on, and thus differenced values begin in 1995.

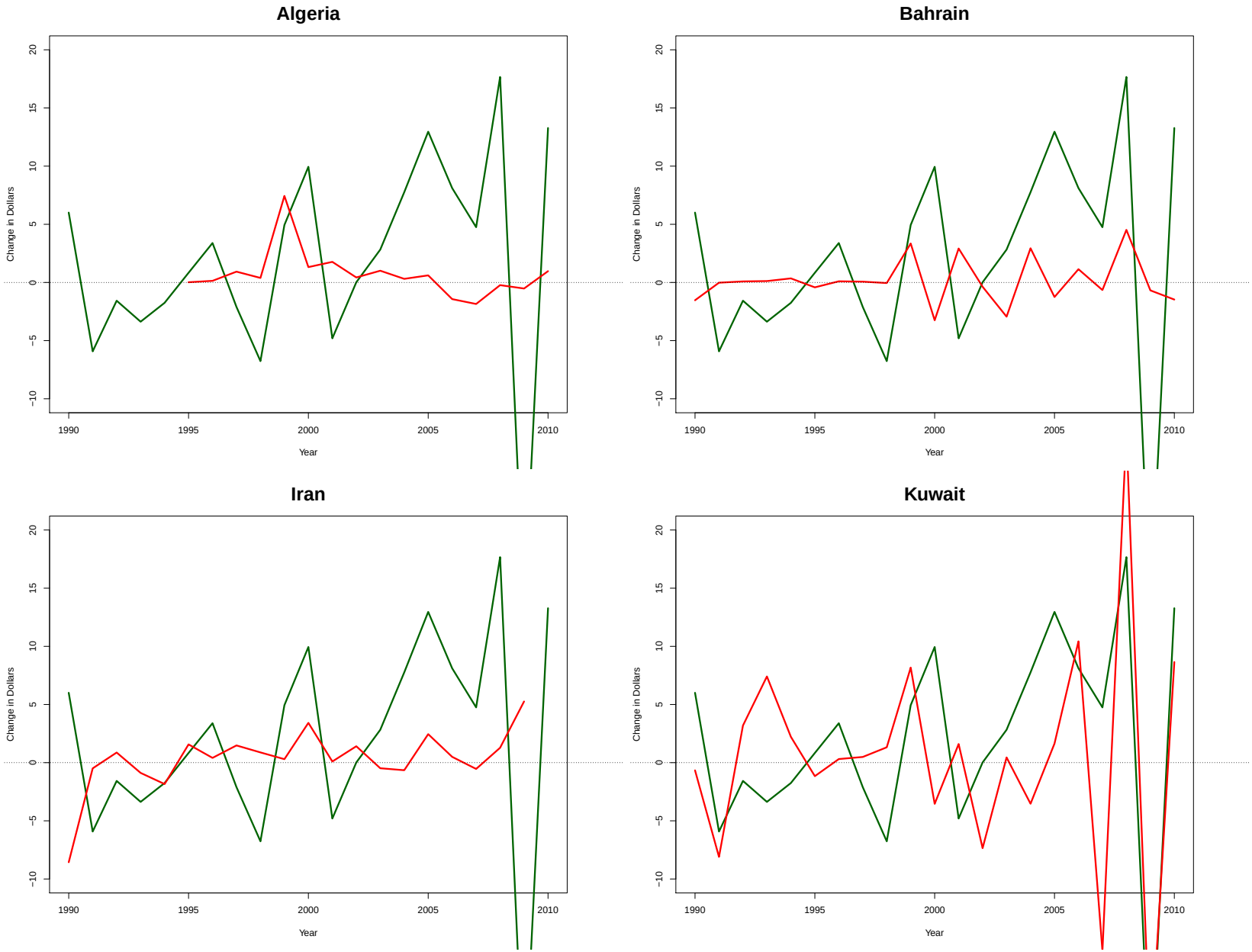

Figure 6: Changes in oil price (green) against changes in logged social protection spending per capita (red). Oil price data are from Ross-Mahdavi (2014), and spending data are from Yu et al. (2015). Data for Algeria are only available from 1994 on, and thus differenced values begin in 1995.

Third, studying volatility in spending is relevant to both policy and potential future research. Understanding how welfare systems do or do not work is a prerequisite to imagining how they might better serve goals most people care about: effectively providing services and improving human development outcomes. I am sensitive to Esping-Andersen's admonishment that "expenditures are epiphenomenal to the theoretical substance of the welfare state. It is difficult to imagine that anyone struggled for expenditures per se" (Esping-Andersen, 1990, 19-21). Nonetheless, looking at spending and its responsiveness to political and economic factors is an important a first step—an important baseline to cover—in trying to understand what might be going on with social policy in OPCs. Luciani (2011) argues that an essential function of the state for OPCs and a crucial component of its legitimacy should be isolating the domestic economy from the consequences of fluctuating international commodity prices. Economic studies suggest, however, that this happens infrequently. Recent research on the resource curse has begun to examine more closely the harms for countries endowed with oil associated with volatility of this major source of their revenues. Scholars have explicitly argued that it is oil volatility, not oil abundance, that drives the economic resource curse (Cavalcanti et al., 2015; El-Anshasy et al., 2015). Given the rich literature on rentier state economic crises and their relationship to regime type, regime change, and conflict (Karl, 1997; Lowi, 2009; Ross, 2012; Smith, 2004, 2007, 2015; Vandewalle, 1998), oil volatility is clearly a major aspect of the political resource curse as well.

The feature of price volatility so disruptive to policymakers is that it renders long-term planning difficult. The booms require policymakers to make ongoing decisions about how most efficiently or profitably to invest their gains or whether to consume them in the present. The busts (if not cushioned) may lead to potentially threatening political crises. Even though some governments have introduced fiscal rules to induce countercyclical spending during boom times, there is little evidence that these rules have had their intended effect (Arezki and Ismail, 2013). The effects of volatility specifically on governance and regime type are less clear-cut. Several studies find that while higher levels of oil wealth may hinder democracy, short-term increases in such wealth have no consistent effect (Andersen and Ross, 2014; Ross, 2015; Wright et al., 2015). Spikes in corruption and rent-seeking are plausible short-term effects: with weak law-enforcement institutions, a price shock may increase demand for private protection and opportunities for rent appropriation, leading mafia-type

organizations to emerge (Buonanno et al., 2015). In sum, there are a lot of open questions about the short-term impacts of oil price volatility on politics in OPCs short of major crises and regime change or durability.

Finally, moving forward with a research agenda that might study the evolution of social policies over time in a given country or set of countries necessitates (a) putting those cases in context and (b) choosing cases to study in a principled way. This large-n cross-national quantitative analysis will serve as the first phase in a nested research design combining such cross-national testing with within-case process tracing to establish that theorized causal mechanisms are actually at work (Lieberman, 2005; Rohlfing, 2008). Given the relatively poor fit of the models derived below, this will most likely be a model-building nested analysis (Lieberman, 2005) that aims to uncover causes and variables that would allow me to better account for the variation observed in the cyclicality of social protection spending, other forms of welfare spending, the nature of social policies themselves, and the consequences of those policies and spending for political behavior. Later, for example, I hope to incorporate contentious politics into this framework, asking how contention shapes social policy and vice versa.

Oil price volatility hurts the economy, and it hurts governments' ability to manage resources. The volatility of social protection spending noted above likely also negatively affects citizens who see the resources available to them fluctuate and who may not trust that their governments can manage oil revenues competently enough to ensure their well being. Volatility of social protection spending in OPCs is dramatic in itself and has potentially dramatic consequences for human development and political mobilization. What accounts for this volatility?

Theory and Hypotheses

Existing theories of fiscal cyclicality, authoritarian politics, clientelism, and the rentier state offer some initial hypotheses, and I will advance an additional theory of social policy institutionalization and its effects on spending volatility. While each of these theories makes assumptions about citizen behavior and has observable implications for citizen behavior and preferences, this paper will not test those assumptions or implications. Instead, I focus here on the incentives and constraints that

leaders and governments face in managing revenue volatility and responding to (assumed) demands for spending.

These theories approach the question from two different premises. The first is that there might be reasons why leaders—despite the advantages noted by both neoclassical economic theory and Keynesian theory—do not prefer to implement countercyclical policies. Leaders may prefer to spend in the present if they fear they will not be around long enough to benefit from a sound economy in the future (a time-horizon issue). Relatedly, citizens may prefer current to future spending if they perceive the administration as corrupt or not competent enough to manage oil savings (Humphreys and Sandbu, 2007; Ross, 2012, 219). The demand-side of this argument might also apply to revenues derived from taxes. It suggests that, as Alesina et al. (2008) found, among democracies (where constituents can demand higher spending), procyclicality with respect to economic cycles is higher in more corrupt countries. This also dovetails with theories and findings from the literature on electoral clientelism, which suggest that competitive or even semi-competitive elections can both (a) lead to increased distribution of private and public goods as electoral incentives (Calvo and Murillo, 2004; Zucco Jr., 2013) or (b) create adverse selection problems in which politicians who promise more current spending as a reward for voters' support are more likely to be elected (Levitt and Snyder, 1997).

But it is not only in democracies or electoral systems that citizens can pressure governments to spend more. With respect to social protection spending in OPCs in particular, both theories of authoritarian politics and the rentier state suggest that such spending is used either (a) to pre-empt challenges to incumbent rule, (b) to respond to challenges to incumbent rule, (c) to replace the need to tax subjects (especially elites) in order to enact generous distributive policies (Dunning, 2008), or (d) some combination of the above. How these pressures affect a given government will be conditioned by the nature of the governing coalition.[3] We might expect, then, that even in

[3]Attempting to build a theory of authoritarian social policymaking, Mares and Carnes (2009) suggest three authoritarian regime ideal-types that might make social policy in distinct ways, building on selectorate theory (Bueno de Mesquita et al., 2003): in the first ideal-type, a leader rules by terror (i.e., with a very small winning coalition) and enacts little or no social legislation; in the second, a leader rules in collusion with key monopolistic sectors and creates restrictive social policies with generous benefits but narrow coverage; and in the third, a leader rules via cooptation through organizational proliferation. In the latter case, social policy will be characterized by institutional fragmentation and unequal access to benefits, but broader social policy coverage than in the collusive regimes Mares and Carnes (2009, 98-100). However, Mares and Carnes do not theorize how temporal variation in coalition conditions and available resources might affect the evolution of social policy. Logically, however, it makes sense to posit that

the absence of full democracy, greater levels of political competitiveness—for example in electoral authoritarian systems—might lead to greater government responsiveness to spending demands when conditions are permissive, such as when oil prices increase for OPCs.

Based on these theories, then, we would thus expect greater procyclicality of social spending in cases where there is greater political competition (even within an authoritarian setting), or where perceived corruption is greater (because of time-horizon issues). It is also possible that social protection might be a corrupt sector through which side-payments are made.

H1: Politicians will be *less likely to pursue* countercyclical policies, and thus we are likely to see *more procyclical social protection spending*, when (a) a country's political system is more competitive, or (b) the perception of corruption in a country is higher.

It might also be the case that leaders have long time horizons, understand that countercyclical policies are preferable, and face fewer demands for current spending, yet nonetheless fail to succeed in implementing countercyclical fiscal policy. In other words, the problem is not one of intentions but of state capacity. Ross (2012) suggests that it is very difficult to get countercyclical policies right, and that we need not assume that OPCs have weaker than average state capacity, writing that "perhaps [rentier states] already have normal institutions, but need exceptionally strong ones" in order to manage revenue volatility (215). If that is the case, however, then we still need to account for variation in this capacity among OPCs. Why do some of them manage better than others?

One argument is that varying adoption of fiscal rules drives variation in fiscal cyclicality. Following the first boom-bust cycles, governments became increasingly cognizant of the benefits of countercyclical measures, and policy experts at the IMF and other institutions counseled leaders to tie their own hands to avoid excessive procyclical spending. Today "virtually all oil-rich governments acknowledge the importance of countercyclical fiscal policies" (Ross, 2012, 206). During the boom years of the 2000s, fiscal rules of varying types became increasingly common, while the institutional means of implementing them have varied across countries. Some countries divert fixed portions of

the greater institutional fragmentation and broader access to benefits characterizing larger coalitions would induce greater volatility in spending as leaders face a greater number of constituencies that they need to pay off or whose discontent they need to pre-empt.

resource earnings into stabilization funds meant to smooth over price cycles; others channel wealth using more discretionary rules into sovereign wealth funds (SWFs). On the surface, it seemed as though many, if not most OPCs had embraced a new ethos of countercyclicality. Yet researchers have found that the adoption of SWFs reflected a "policy fad" more than a genuine lengthening of time horizons (Chwieroth, 2014), and they have failed to find a relationship on average between adoption of fiscal rules and smoother spending patterns. The reason appears to be that when push comes to shove, politicians will often violate the rules they have set for themselves. Humphreys and Sandbu (2007) emphasize that it is strong checks and balances in the political system and a high degree of transparency—not simply the presence of a fund for saving resource wealth—that keeps governments from overspending surpluses during boom times.

Based on these theories, we would thus expect greater procyclicality of social spending in cases where state capacity is weaker.

H2: Politicians will be *less able to implement* countercyclical policies, and thus we are likely to see *more procyclical social protection spending*, when state capacity is weaker.

The above theories and the research on fiscal rules speak to overall government consumption patterns rather than social protection spending specifically. But the focus on institutions that constrain policymakers' choices and set expectations about how revenues will be spent suggests that other, lower-level institutions may also matter for specific types of government spending. I therefore posit that in examining volatility of social spending we ought to examine a more proximate constraint on spending: the presence of laws defining social protection programs. Do laws affect how such spending actually changes in response to revenue volatility?

I suggest that to answer this question we should examine the extent of what I call *social policy institutionalization*. By this I mean the extent to which distribution—how much money will be spent, on which categories of beneficiaries, and for what purposes—is codified in transparent laws, the extent to which those laws represent how benefits are actually distributed, and the extent to which citizens understand codified social benefits as a credible commitment on the part of the government and seek to hold the government accountable for fulfilling that commitment. In the

present paper, I will focus only on the first component—the codification of policies in law—as a first step toward assessing the plausibility of this approach (and due to current data limitations on judging the latter components). The analysis below should be read keeping in mind that I do seek to distinguish codification of laws from their actual implementation. Anecdotal perusal of the social policies of a number of OPCs suggests that most laws do lead to actual distribution of benefits; the real question is what *additional uncodified* benefits are distributed and their importance relative to codified benefits. Nonetheless, I hypothesize that the existence of laws transparently outlining distributive policies contributes to greater transparency and rule-based determination of government spending, which might reduce the pressure from citizens to boost spending or reduce the discretion of policymakers to easily ramp up spending during booms.

Moreover, I hypothesize that longevity of these institutions across time matters. A central argument in the literature about the conditional effects of oil wealth has been that where oil wealth met state institutions that were already strong because they had been built without easy access to revenues, the negative economic and political effects of resource wealth have been mitigated (Smith, 2007). I hypothesize therefore that in countries with codified laws in a greater number of social policy areas prior to 1950 (as a tentative cut-point), we should see less procyclicality in social protection spending with respect to oil prices.

I thus advance two hypotheses about the expected effects of codified social policies:

H3: Greater present codification of social policies in law should be associated with *less procyclical social spending*.

H4: Greater codification of social policies before oil wealth became a significant component of state revenues should be associated with *less procyclical social spending* and should have a *stronger* influence than total present policies.

Data

In order to test these hypotheses, I constructed an original time-series cross-national dataset containing information about oil prices, macroeconomic indicators, public spending, social protection

laws, and political features of 56 OPCs covering 1932-2010. The unit of analysis is a country-year. Countries were included if they met the threshold of having at least $100 per capita in oil income in 2009, following Ross (2012, 20-22). Due to limitations in data availability on the dependent variables of interest and theoretical interest in government spending over the past two decades, the final dataset on which I conduct my analysis includes 45 countries (excluded cases are italicized in the table below) over 1990-2010 for a total of 945 observations of several hundred political and economic variables. The final dataset contains countries from all regions of the world, although the Middle East and North Africa constitutes the largest single regional bloc, and a mix of democratic (406) and autocratic (588) country-years. I also conduct my analysis on a smaller set of countries for which oil represents a larger share of the economy, following IMF analyses of OPCs (Erbil, 2011; Villafuerte and Lopez-Murphy, 2009). These countries are marked below with an asterisk and I refer to them in the rest of the paper as the "restricted" sample.

Table 1: Universe of Cases & Data Availability

Middle East & N. Africa	**Latin America & Caribbean**	**Sub-Saharan Africa**
Algeria*	Argentina	Angola*
Bahrain*	Bolivia*	Cameroon*
Egypt	Brazil	*Chad*
Iran*	Colombia	Congo*
Iraq	*Cuba*	Equatorial Guinea*
Kuwait*	Ecuador*	*Gabon*
Libya	Mexico*	Nigeria*
Oman*	*Suriname*	Sudan*
Qatar*	Trinidad and Tobago*	Uganda
Saudi Arabia	Venezuela*	
Syria		
Tunisia		
UAE*		
Yemen*		

E. Europe & C. Asia	**E. Asia & Pacific**	**Eurozone & High Income**
Azerbaijan*	*Brunei*	Australia
Kazakhstan*	*East Timor*	Canada
Romania	Indonesia*	Croatia
Russia*	Malaysia	Denmark
Turkmenistan	Papua New Guinea	Netherlands
Ukraine	Thailand	New Zealand
Uzbekistan	Vietnam*	Norway*
		UK
		USA

Italicized countries are not included in the analysis due to lack of data on the dependent variables. Countries marked with an asterisk are included in the smaller set of countries analyzed as OPCs in recent IMF papers (Erbil, 2011; Villafuerte and Lopez-Murphy, 2009). The full list is taken from Ross (2012)'s identification of all countries in the world with at least $100 per capita of oil and gas production (in 2009 dollars) in 2009.

The key dependent variable is social protection (SP) spending. I take data on SP spending from the Statistics on Public Expenditures for Economic Development (SPEED) dataset published by the International Food Policy Research Institute (Yu et al., 2015), from which I also draw measures of public spending in other sectors for comparison. The underlying data in the SPEED dataset come from the IMF's *Government Finance Statistics* (GFS) Yearbook, supplemented by the IMF's *Statistical Appendix* and *Selected Issues* publications, the World Bank's *Public Expenditure Reviews*, and in some instances data from in-country or national sources. The data have been cross-validated and converted into comparable units for ease of analysis. I employ two different measures of SP: spending on SP as a percent of total government expenditure, and per capita spending on SP in purchasing power parity (PPP)-adjusted 2005 US dollars. The former is a measure of relative priority given to social protection spending within a government's budget (or the strength of SP spending obligations relative to total spending), while the latter is a measure of the magnitude of SP spending vis-a-vis individuals in a given country.

I examine each of these dependent variables in two ways: first, in terms of correlations between political variables and the *volatility* of spending, measured as the standard deviation across time (as in the descriptive figures above). Correlational relationships are estimated by a simple OLS regression of the standard deviation of spending volatility on the mean value of each covariate for each country.

Second, I look at the *responsiveness* of spending to changes in oil price. I estimate this using a fiscal reaction function:

$$\Delta(\text{Spending})_{it} = \quad \alpha_i + \beta\Delta(\text{Oil Price})_{it} * X_{it} + \eta\Delta(\text{Spending})_{i,t-1} + \gamma Z_{it} + \epsilon_{it} \tag{1}$$

where $\Delta(\text{Spending})_{it}$ is the differenced measure of SP spending, α_i is a country fixed effect, Δ(Oil Price) is the differenced oil price in constant 2000 US dollars (taken from Ross and Mahdavi (2014)), X_{it} is a vector of independent variables which are each interacted with the oil price change, $\Delta(\text{Spending})_{i,t-1}$ is the lagged dependent variable, and Z_{it} is a vector of control variables. This model follows econometric literature estimating fiscal procyclicality (Alesina et al., 2008; Erbil,

2011; Talvi and Vegh, 2005; Villafuerte and Lopez-Murphy, 2009) with some modifications.[4] When estimating this model with SP spending per capita as the dependent variable, I use a log transformation of the variable. I also note that while including both country fixed-effects and a lagged dependent variable induces Nickell bias, the number of time periods in this panel is sufficiently large that this bias should not be a significant problem (Beck and Katz, 2011).

Several control variables are included in every estimation, including one which I interact with the change in oil price. This variable is *rent leverage*, a measure of "the capacity of rulers in oil-rich countries to influence their citizens' everyday lives by virtue of managing oil sector income" (Smith, 2015, 2). Rent leverage is calculated by dividing fuel income per capita by GDP per capita adjusted for purchasing power parity (PPP). Smith (2015) introduces this measure, arguing that it represents the best operationalization of fuel income with respect to theories about how resource wealth affects political outcomes. Other measures present difficulties: taking oil as a share of exports ignores that exports may represent a relatively inconsequential or a major component of an economy. Oil export revenues as a share of GDP do not capture how much "patronage or coercive boost" (Smith, 2015, 5) such revenues give regimes with respect to each citizen, and using this measure excludes rentier states that by virtue of relatively small production (Tunisia) or large size (Egypt) do not export significant amounts of the fuel they produce. Finally, the current benchmark measure, oil income per capita (from which rent leverage is derived) is not without problems—in particular, the fact that production volumes are endogenous to politics, especially political stability—but it avoids shortcomings of the other measures. Using rent leverage rather than the unadjusted fuel income per capita moves this research in line with best practices in development economics, where PPP-adjusted measures are preferred, as they more accurately reflect what varying levels of nominal wealth mean in terms of individuals' standards of living. I interact rent leverage with the change in oil price to capture the fact that such price changes will differentially affect the spending capacities of governments depending on the existing extent to which they benefit politically from oil wealth.

[4]The key difference is that while these authors are estimating the cyclicality of total government consumption measured in absolute terms, I am interested in looking at the responsiveness of a particular sector of spending in relation to overall spending and vis-a-vis citizens using the per capita measure. Whereas they use change in GDP as the key independent variable, I use change in oil price as the key independent variable while controlling for the overall GDP growth rate. In the smaller sample of OPCs for which I have the data, I control instead for non-hydrocarbon GDP growth rate.

Second, I control for *annual percent GDP growth*, taken from the World Bank's Bank (2016). This takes account of the possibility that changes in SP spending are the result of broader patterns of economic growth, in which case they are not cyclical, but merely a response to increasing wealth. In the restricted subset, as an alternative specification, I control for the *growth of non-hydrocarbon GDP* (taken from replication data obtained from Villafuerte & Lopez-Murphy, 2010). This is a measure of the overall strength of the economy not including the contribution from hydrocarbon production and is a more direct measure of how non-oil-related development affects spending.[5] Finally, I also control for population, as part of the variation in volatility might be due to the different fiscal and administrative burdens of reaching populations of different sizes.[6]

The independent variables cover the range of political characteristics noted in the hypotheses. I introduce an original measure of the legal codification of social policies. I have coded descriptions of social policy systems found in the US Social Security Administration's publication *Social Security Programs Throughout the World* (2015). USSSA tracks legislation in different countries across five policy areas: (1) old age, disability, and survivor's benefits, (2) sickness and maternity benefits, (4) work injury, (4) unemployment, and (5) family allowances. Prior work in the welfare state literature has drawn on the USSSA's publications both descriptively and quantitatively (Hicks and Swank, 1984; Kennett and Oakley, 2001; Schneider, 1982). While I am in the process of undertaking more detailed coding of policy variation, for the purposes of this paper I construct a set of simple indicators for each country, each of which is a count of the number of policy areas (out of 5 possible, aligning the the areas noted above) for which a country has laws. *Total policies* is a count in any given year of how many policy areas have associated laws. *Early policies* is a static indicator for each country of how many policy areas had an associated law by 1950 (inclusive). For example, Algeria (then part of France) had laws in four policy areas in 1950 (every area except unemployment) which were maintained upon independence; it has four *early policies* throughout the whole dataset, and five *total policies* beginning in 1994, when the government first introduced an unemployment insurance scheme. This is, admittedly, a very crude way of measuring of social

[5] Of course, volatile oil revenues also affect the non-hydrocarbon economy, but in OPCs they mostly do so through changes in government consumption and investment. Unfortunately, I currently lack access to this data for the full sample of countries, so it is not used in for the full sample.

[6] It is also common in the aid literature to control for foreign exchange reserves when looking at how states manage shocks. I plan to incorporate this variable in further iterations of this project.

policy institutionalization, and I regard the use of these variables as an initial plausibility test of the argument that institutionalization (limited here to legal codification) mediates the effect of oil price volatility on social spending volatility.

As a proxy for corruption, I use Transparency International's International (2016), which ranges from 1-10.[7] While a problematic measure in that it is based on subjective assessments of how corrupt countries are—and thus a country with more visible corruption might be rated worse than a country with equally bad, but less visible corruption—it has been used in prior work on the relationship between corruption and fiscal cyclicality; therefore, at a minimum, it allows for comparability with prior work. I use the index rating given each country in the year 2000 or the earliest available year (none later than 2005)[8] and employ it as a static indicator that does not vary across time in the data set. This is for two reasons: first, I am mainly interested in assessing how relative levels of perceived corruption, not changes in perceived corruption within cases, relate to spending cyclicality. Second, as most CPI rankings change little over time, I also do not lose much by taking a single value of this indicator for each country, while I avoid encountering significant missing data problems associated with using it as a time series.

As a proxy for state capacity, and following Smith (2015), I use the variable *relative political extraction (RPE)* from the Relative Political Capacity Dataset (Kugler and Tammen, 2012). This is a measure of "the ability of governments to appropriate portions of the national output to advance public goals" (ibid., 11). It is calculated by re-weighting a measure of tax revenues as a percent of GDP to account for the relative contributions of mining, agriculture, and exports to GDP (for developing countries) or measures of mining and export contributions only along with GDP per capita (for developed countries). A higher value on this indicator indicates greater state extractive capacity. There are limits to how useful an indicator of tax collection as the measure of state capacity can be, particularly in this context, but it remains the best available proxy for the administrative and extractive strength that often accompanies a more capable state in general.

As a proxy for political competition, I use the Polity IV (Marshall et al., 2016) conceptual vari-

[7] More recent versions of the CPI use a scale of 0-100.

[8] CPI values not from the year 2000 are used for Algeria (2003), Bahrain (2003), Congo (2003), Equatorial Guinea (2005), Iran (2003), Kuwait (2003), Oman (2003), Qatar (2003), Sudan (2003), Syria (2003), Trinidad and Tobago (2001), the UAE (2003), and Yemen (2003). I lack a CPI value for Papua New Guinea.

able *polcomp*, which ranges from 1-10. Values for this indicator are determined by combining two underlying measures, regulation of participation (*parreg*) and competitiveness of participation (*parcomp*), each of which ranges from 1-5. A score of 1 on *polcomp* ("suppressed") indicates that political participation is restricted and competition is repressed. A score of 10 on *polcomp* ("institutionalized electoral") indicates that political participation is regulated (i.e., institutionalized) and competitive. Finally, I test the dummy indicator for *democracy* from the Geddes, Wright, and Frantz Autocratic Regimes Dataset (2014) as a coarse measure of whether having the "whole package" of democratic institutions, as opposed to relatively competitive but potentially illiberal political processes, mediates the effect of oil price volatility.

Findings

Volatility

In this section, I present initial findings found from the set-up described above and interpret them. First, I explore the correlational relationships between volatility of SP spending and the independent and control variables. The table below presents the results from regressing the standard deviation of spending for each country on the mean values (again for each country) of the control and independent variables. There are fewer than 45 observations in the full sample because some countries are missing data on various independent variables. The most notable feature of the results is the lack of strong relationships. The only significant covariates are the measure of corruption perception (for both dependent variables) in the full sample, but not in the restricted sample of OPCs; and the measure of state extractive capacity for both samples when the dependent variable is the volatility of SP spending as a percent of total expenditure. The former indicates that countries perceived as less corrupt (i.e., with a higher CPI ranking) have less volatile spending—but this relationship is only significantly strong when a number of countries with low corruption and low volatility are included, e.g. most of the high income countries in the full sample. When looking only at the restricted sample, the sign and magnitude of the effect of corruption perception does not change for the spending percent DV, but the lower power of the regression makes this finding insignificant. For the other DV, per capita spending, the coefficient actually changes sign in the

restricted sample.

Table 2: Regressions of Spending Volatility on Variable Means

	Percent Spending		Per Capita Spending	
	Full Sample	Restricted Sample	Full Sample	Restricted Sample
Log Rent Leverage	0.28	0.98	−0.08	−0.46
	(1.32)	(3.72)	(0.12)	(0.37)
Log Population	1.08	0.97	0.06	0.02
	(0.77)	(1.16)	(0.07)	(0.12)
GDP Growth	−0.17	−0.91	−0.01	−0.04
	(0.57)	(0.97)	(0.05)	(0.10)
Corruption Perception	−0.93**	−1.03	−0.09**	0.07
	(0.41)	(1.58)	(0.04)	(0.16)
Political Competition	−0.20	−0.38	−0.04	−0.04
	(0.61)	(0.97)	(0.06)	(0.10)
Total Polices	0.36	−0.04	0.03	−0.05
	(1.17)	(1.40)	(0.11)	(0.14)
Early Policies	0.15	0.41	−0.02	−0.02
	(0.67)	(0.86)	(0.06)	(0.09)
State Capacity	8.34***	6.80*	0.20	0.23
	(2.53)	(3.18)	(0.24)	(0.32)
Democracy	2.65	1.92	0.09	0.20
	(2.78)	(5.13)	(0.26)	(0.51)
Constant	−19.69	−11.65	0.05	0.86
	(15.61)	(21.60)	(1.46)	(2.16)
Observations	38	19	38	19
R^2	0.42	0.49	0.47	0.46

Note: *p<0.1; **p<0.05; ***p<0.01

These findings are also reflected in looking at raw bivariate correlations between the independent and dependent variables: most of these correlations are very weak. Moreover, these correlations appear to be washing out significant variation across regional subsets in the magnitude and sign of correlations between the independent and dependent variables (not shown). Indeed, viewed region by region, there is not a single covariate that has a consistent *sign*, let alone magnitude, in its relationship to spending volatility. The weak overall relationships and significant regional heterogeneity suggest that disparate causal relationships between political variables and spending volatility are likely at work. Moving forward, I hope to be able to identify specific examples of heterogeneous causal pathways.

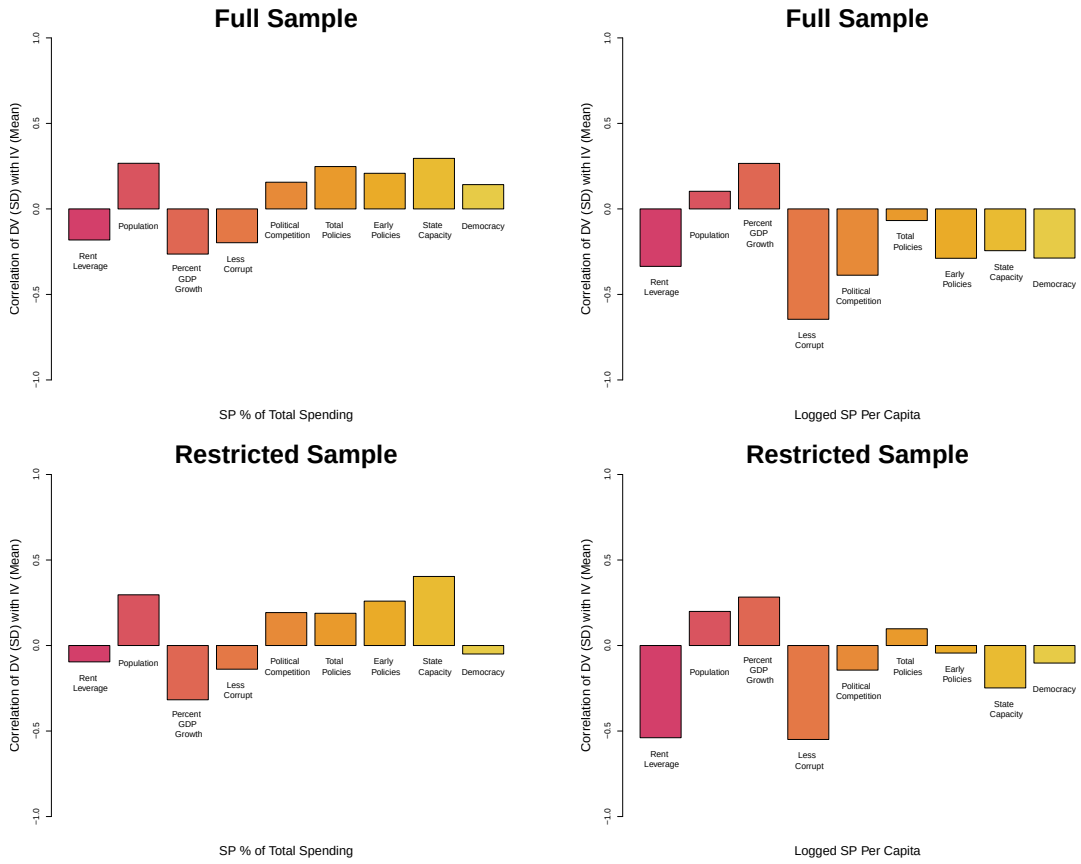

Figure 7: The top figures presents the raw bivariate correlations between the covariates and independent variables and the volatility of SP spending as a percent of total expenditure in the full sample (top left) and the same bivariate correlations for the DV of SP spending per capita (top right). The bottom figure present the same set of bivariate correlations, but only for the restricted set of OPCs.

Responsiveness

For both the full sample and the restricted sample, I estimated the fiscal response model described above in *Data*. In addition to running a model which includes all of the covariates and independent variables in the same estimation—results of which are presented here—I ran the model testing each independent political variable of interest one by one, consistently including GDP growth rate, population, and the interaction of oil price difference with logged rent leverage as controls. Those results are not presented here, but confirm similar findings. For each interaction, I used the *effects* package in R to plot the marginal effects of the interacted variables. Plotting the marginal effects allows for meaningful visual interpretation of the interaction estimation results, which is difficult to do from a regression results table (Brambor et al., 2006). I present the plots for the political competition variables (polcomp and democracy) and my novel measures of social policy institutionalization (early policy and total policies). I note in writing the results for rent leverage, corruption, and state extractive capacity.

Interpreting the marginal effects from the fiscal response function is relatively straightforward: where this effect is negative, spending response is countercyclical. Where it is positive, it is procyclical.

First, in the full sample with SP spending as a percent of expenditure as the DV (Figure 8), I find no significant marginal effects for rent leverage, corruption, or state capacity: for each variable, the responsiveness of spending to oil price changes is near zero and does not differ across levels of the independent variables. I find the clearest effects with respect to political competition: regardless of the relative level of oil price changes, greater political competition is associated with more positive responses to change in the oil price. The slope is slightly steeper at negative values of oil price change (i.e., when oil prices have dropped), suggesting that less competitive states are more countercyclical—i.e., reluctant to cut spending—during downturns. Democracy, however, has the opposite relationship: it is associated with more countercyclical patterns. The estimated marginal effects of total polices are modestly downward sloping at higher levels of oil price change but essentially flat when oil price change is negative, in line with the theoretical expectation that having a greater number of total policies would restrain procyclicality during a boom. This also reflects

prior findings that spending is sticky during downturns (Arezki and Ismail, 2013). Conversely, the estimated marginal effects of early policies are upward sloping, as with political competition. In the full sample with SP spending per capita as the DV (Figure 9), I find the same set of outcomes, but the estimated marginal effects of political competition, democracy, total policies, and early policies are slightly stronger (indicated by steeper slopes).

The direction of the relationship between early policies and fiscal response is the opposite of what I hypothesized. I suspect this may be because, contrary to my hunch that longevity of institutions would represent greater adherence to rules-based spending and resistance to procyclical pressures, this variable may be proxying for something else: the strength of social forces capable of pressuring governments for increased spending when revenues rise. This might be the case for two reasons which could overlap. Either pre-existing strong social forces were instrumental to the early introduction of social policies to begin with, or the long-standing presence of social policies has contributed to the emergence of social policy constituencies—people who benefit from certain policies, who may be organized, and who are knowledgeable about government provision of benefits—that can pressure governments to increase spending when revenues rise. The latter explanation would be in line with what Pierson (1996) observed in advanced industrial countries when he sought to explain the difficulty of enacting welfare retrenchment: introducing policies in the first place creates constituencies that will engage on debates about social policy in the future.

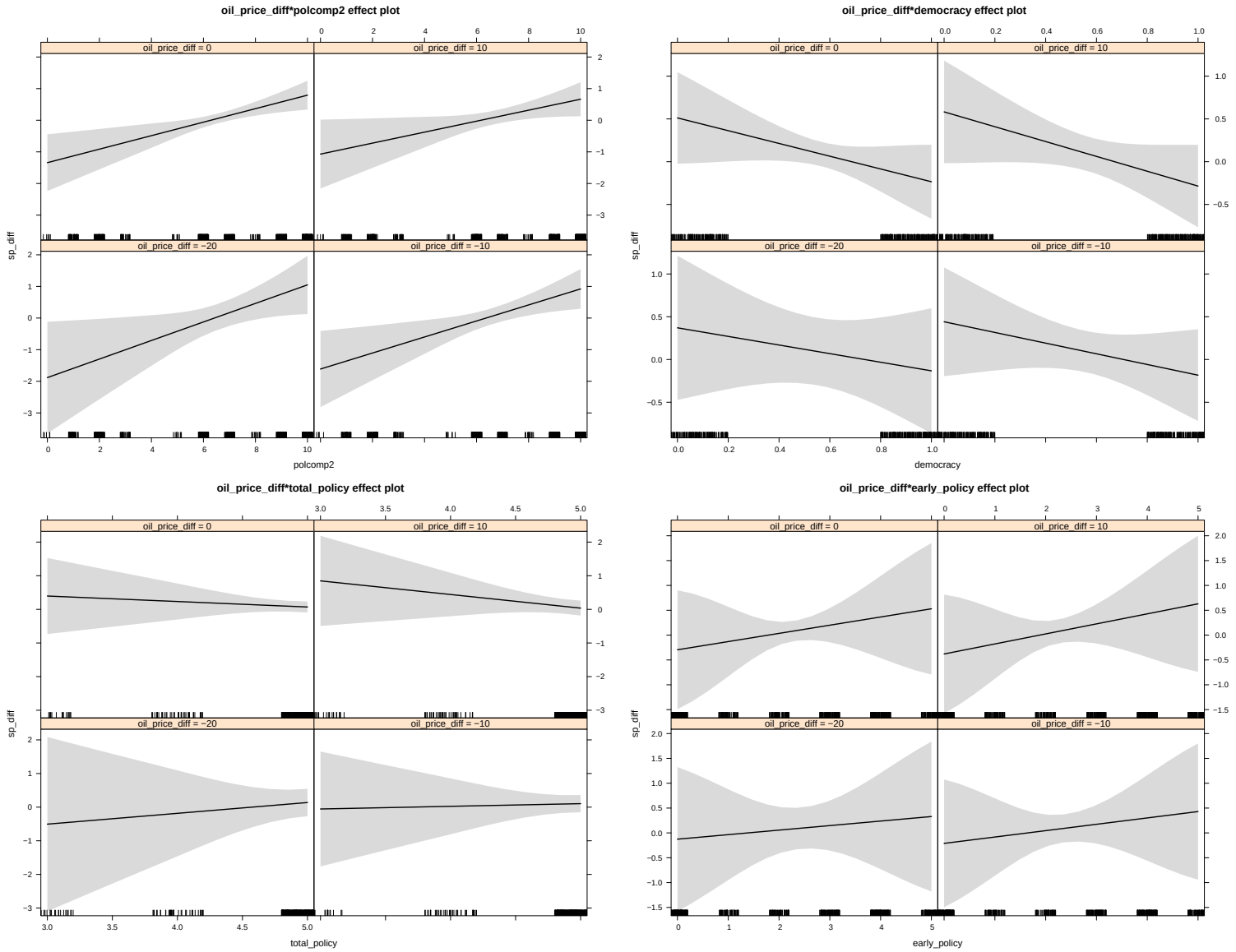

Figure 8: Marginal effects plots for political competition (top left), democracy (top right), total policies (bottom left), and early policies (bottom right), all for **the full sample with SP spending as a percent of expenditure as the DV**.

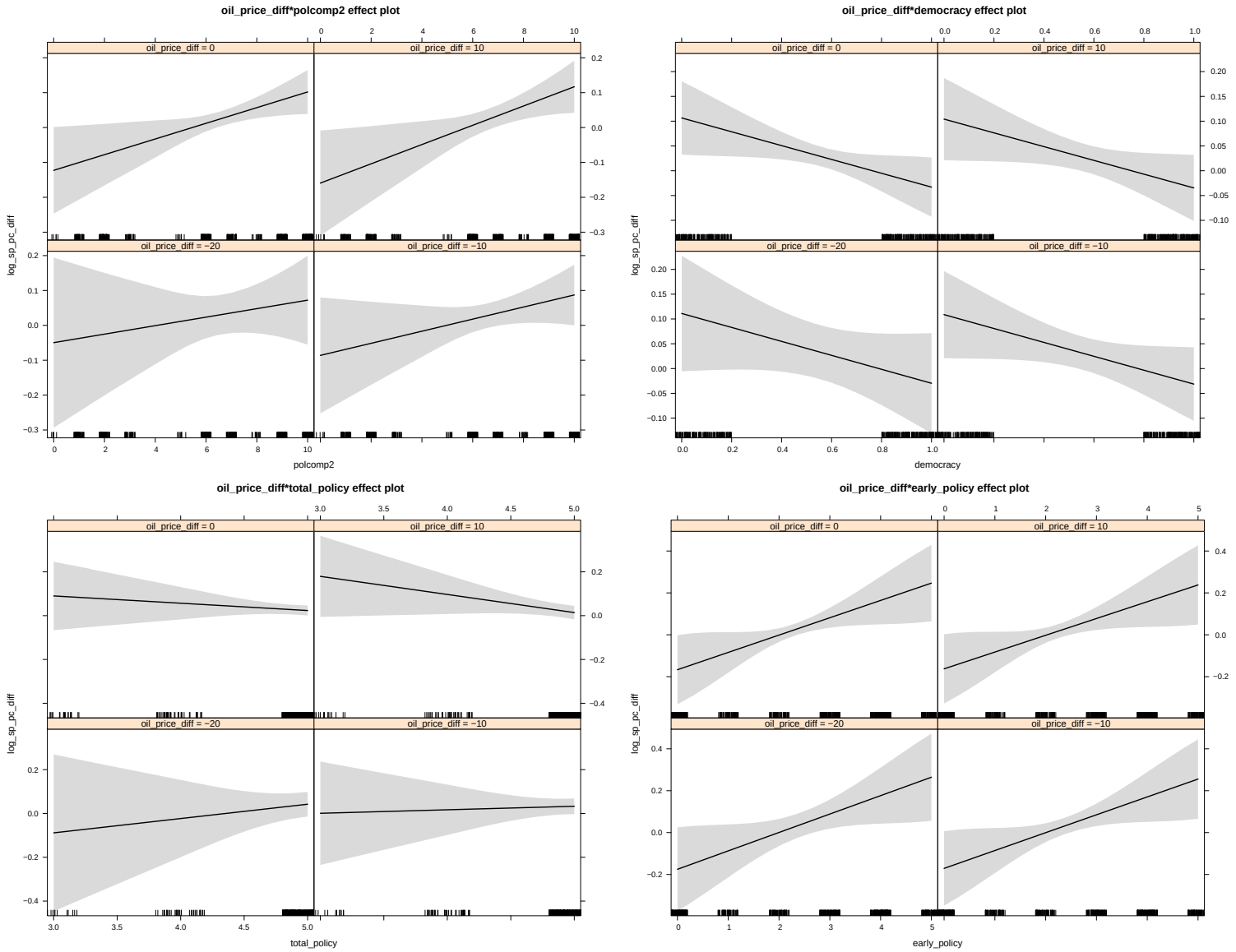

Figure 9: Marginal effects plots for political competition (top left), total policies (top right), and early policies (bottom), all for **the full sample with SP spending per capita as the DV**.

Second, I examine the same model applied only to the restricted sample of OPCs. Here I find more varying marginal effects of political competition and democracy, which now only matter at higher levels of oil price change (but again in opposite directions), and no marginal effects of total policies. The relationship between early policies and procyclicality remains positive and significant. Looking at SP spending as percent of total expenditure as the DV (Figure 10), the marginal effects of political competition and democracy are flat when oil price change is negative (that is, there have no influence when prices drop). When prices rise, however, political competition is positively related to spending change, while democracy is slightly negatively related to spending change. The estimated effect of political competition is strongest when increases in oil price are the largest, suggesting that competition facilitates political demands to increase spending of rising revenues. It is curious that the coefficient on democracy, then, is negative; but this could be an indication that having political competition but not democracy represents a scenario in which politicians face demands to increase spending but lack the transparency, liberal norms of horizontal accountability, or other features of more stable governance that might restrain procyclical spending. Rent leverage, state extractive capacity, and corruption perception rank (not shown) once again have no significant marginal effects.

Looking at SP spending per capita as the DV (Figure 11), we see the same patterns: political competition and democracy matter in opposite directions but only at higher levels of oil price change. Total policies have a null marginal effects, and early policies retain a significant upward-sloping marginal effect.

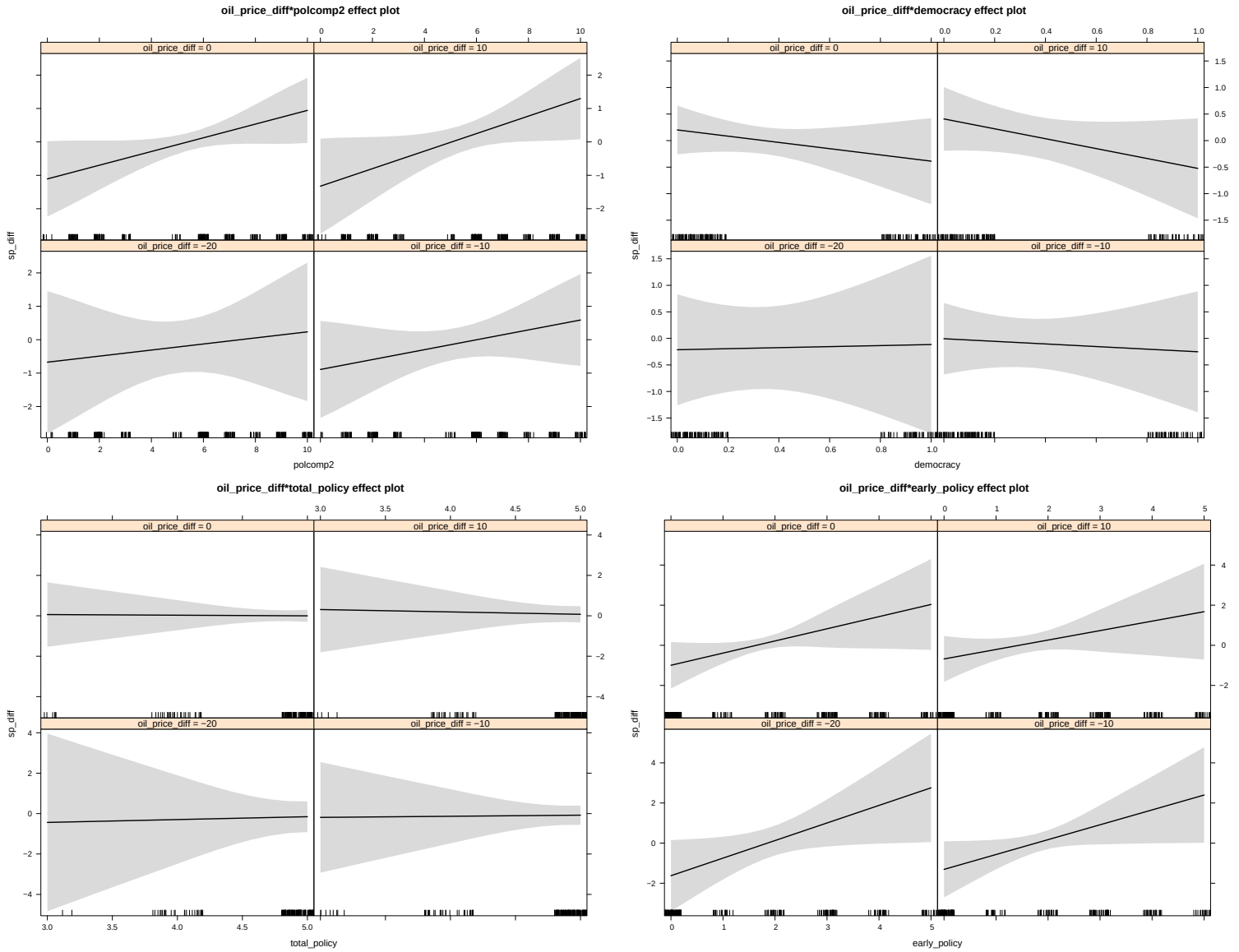

Figure 10: Marginal effects plots for political competition (top left), democracy (top right), total policies (bottom left), and early policies (bottom right), all for **the restricted sample with SP spending as a percent of expenditure as the DV**.

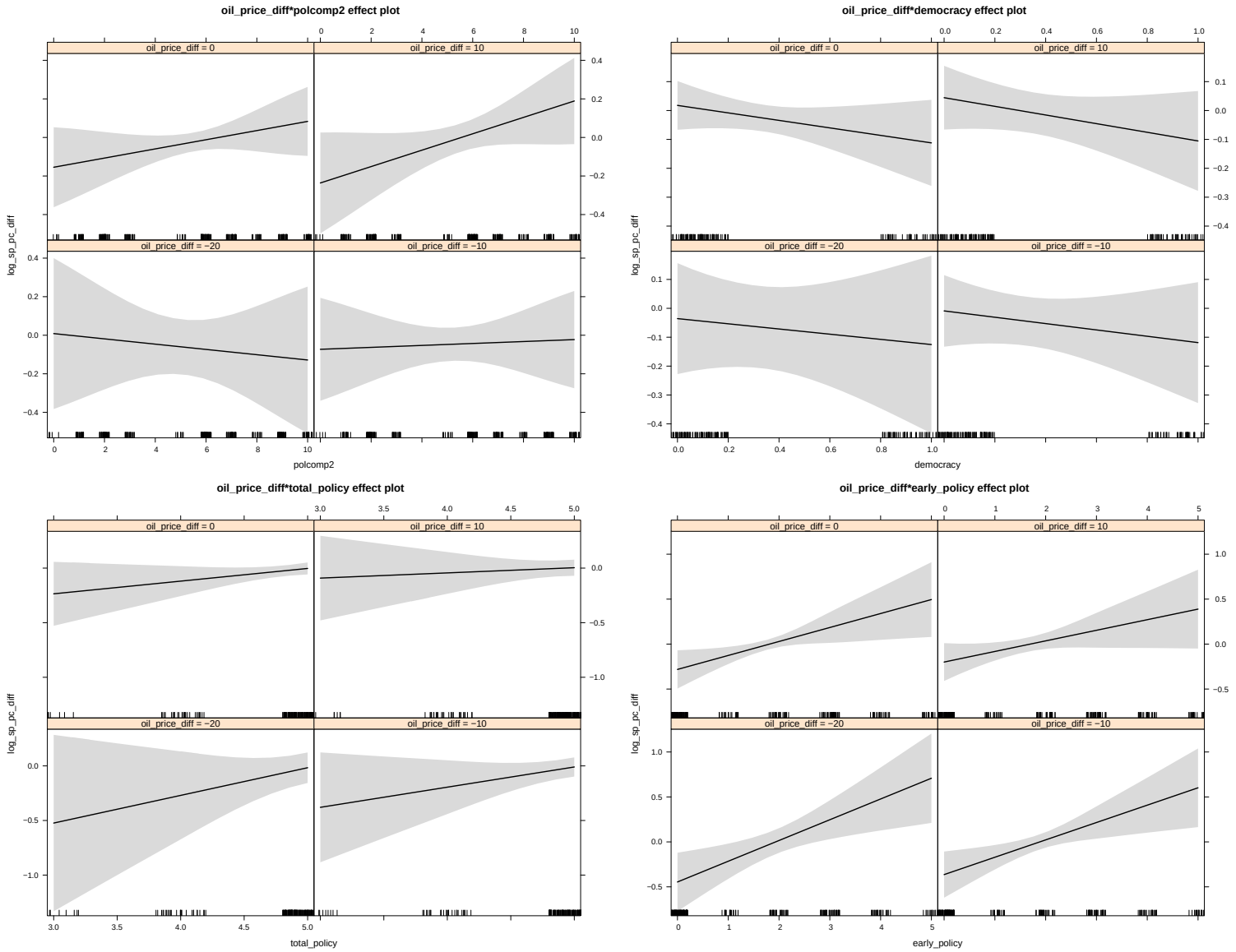

Figure 11: Marginal effects plots for political competition (top left), democracy (top right), total policies (bottom left), and early policies (bottom right), all for **the restricted sample with SP spending per capita as the DV**.

Conclusions and Discussion

Through combining an original dataset of social protection expenditures, various political and economic indicators, and original indicators of social policy institutionalization, I have sought to investigate sources of variation in the volatility of oil-producing countries' social spending and the responsiveness of that spending to changes in the price of oil. My initial results show a surprising weakness of relationships between political variables and volatility measured as the standard deviation of spending in the overall sample of countries (those that produce more than $100 per capita of fuel per year) and a more restricted sample of countries where production is more significant. However, there is some indication that state extractive capacity and perceptions of corruption are related to this measure of overall volatility, in line with what theories of both political demand and state weakness would predict. When looking more specifically at the relationship between changes in the oil price and changes in spending from year to year, however, a slightly different picture emerges. In line with my hypotheses, the relationship between oil price changes and spending changes is positive where political competitiveness is higher and negative when a greater number of social policy areas are codified in law, although only in the full sample. In contrast to my hypothesis, the relationship between oil price changes and spending changes was negative when a greater number of social policy areas were codified in law by 1950. Moreover, the level of a state's rentier capacity, state extractive capacity, and perceptions of corruption did not seem to play a role in the relationship between oil price changes and social spending changes.

These results are tentative, and they face several shortcomings. First, the model fits remain relatively poor, suggesting either that I am inappropriately assuming a homogenous causal process at work and/or missing a significant independent variable or set of variables that would help account better for the variation in the dependent variables. The heterogeneity of bivariate correlations between the independent and dependent variables across regional subsets (not shown) further call into question suitability of treating the pool of OPCs as a universe of cases in which we would expect similar processes to determine the relationship between oil price volatility and SP spending volatility. Second, data availability problems mean that these models are estimated on an unbalanced panel where the nature of the missing data is likely to be biasing the results. Moving forward,

I aim to re-estimate the results on multiply imputed datasets using the R package *Amelia* to help overcome this source of potential bias.

There are several additional robustness checks I intend to undertake. First, I will test alternative variables measuring different aspects of political competition, corruption, and state capacity. I will also gather and test more explicit measures of collective organization—such as union strength—to test my new hypothesis that the early policies measure is proxying for the strength of welfare constituencies able to pressure governments for more spending. Second, I will test whether applying the model to different time frames substantially alters the results produced. Third, if the data allow, I will apply the model to different substantively important subsets of countries, including different regional groupings, groups with different overall levels of rent leverage, and groups with different overall levels of GDP per capita, following prior work (Erbil 2011) which finds variations in procyclicality along these lines. Beyond tests that probe the robustness of the specifications here, I will continue thinking through how best to measure my conceptual variable of social policy institutionalization and continue to build a quantitative dataset from the USSSA publications that would allow me to construct and test different measures of this concept.

Finally, I ultimately hope to use this quantitative analysis as the jumping-off point for work that would be able to actually unpack the causal mechanisms at work in the relationship between oil price volatility and changes to spending or the substance of social policies in OPCs. Selecting cases where we would expect to see the effect of early social policies at work (such as Algeria) or the lack of formal social policies at work (as in Oman, Bahrain, or Kuwait), explicitly stating the observable implications of the theory of social policy institutionalization's effects, and then undertaking causal process tracing to test whether those implications are confirmed would complement the statistical analysis in this paper and allow us to feel more confident about the findings shared here.

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