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A political economy of human rights: Oil, natural gas, and state incentives to repress¹

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Jacqueline H.R. DeMeritt

University of North Texas, USA

Joseph K Young

American University, USA

Abstract

Oil and other natural resources are linked to many undesirable outcomes, such as civil war, autocracy and lack of economic development. Using a state-centered framework for revenue extraction, we identify why oil should also be linked to another undesirable effect: repression. We argue that repression is less costly where states do not rely on their citizenry for generating revenue, so that these states are more likely than others to use indiscriminate violations of personal integrity rights as a policy tool. We test this argument using a cross-national database with a variety of indicators of oil and fuel rents and personal integrity violations. Across all specifications and different indicators, we find a substantive and significant relationship between a state relying on oil and the violation of personal integrity rights.

Keywords

Human rights, natural resources, resource curse, state repression

Introduction

Why do states repress their citizens? A large literature engages this question, and empirical results support two central claims. First, political leaders repress in response to domestic threats (e.g. Davenport, 1995; Franklin, 2009; Gartner and Regan, 1996; Gurr, 1988; Moore, 2000; Shellman, 2006). Second, democratic regimes repress less often and less severely than their autocratic counterparts (e.g. Davenport, 1995, 1999, 2007b; Davenport and Armstrong, 2004; Poe and Tate, 1994; Poe et al., 1999). Clearly, context matters for understanding human rights abuse.²

Corresponding author:

Jacqueline H.R. Demeritt, Department of Political Science, University of North Texas, Denton, TX 76203-5017, USA.

Email: jdemeritt@unt.edu

Recently, scholars have begun considering the influence of contexts other than internal dissent and regime type. For example, Franklin (1997) argues that the receipt of International Monetary Fund (IMF) loans comes with conditions that may increase the state's propensity to repress; Abouharb and Cingranelli (2007) find that structural adjustment programs by both the World Bank and the IMF negatively influence human rights; Hafner-Burton (2009) finds that preferential trade agreements with strong enforcement mechanisms improve respect for human rights; and Young (2009) finds support for the argument that state capacity covaries negatively with human rights abuse. We build on this momentum, further developing our cumulative understanding of how context (structures and conditions) influences leaders' incentives to repress. Specifically, we ask: how do natural resources (e.g. fuel) affect the state's decision to violate citizens' personal integrity rights?

To answer the question, we assume that repression is an appealing domestic policy tool, easily implemented and highly effective. We assume, too, that state leaders seek to maximize revenue under constraints. One potential source of revenue is the domestic population, and repression reduces this type of income. Thus leaders must weigh the benefits of repression (e.g. quelling dissent) against its costs (e.g. lost revenue). As the state's revenue from fuel (oil and natural gas) increases, its reliance on citizens for cash flow—and with it the cost of repression—decreases. As a result, we expect each state's use of repression to covary positively with its revenues from fuel. After developing this logic of repression, we test our expectations using a series of ordered logit models. Our results support existing work and conventional wisdom, and also support our central claim that access to alternative sources of revenue increases the probability of widespread repression. In the conclusion, we discuss the implications of our findings for the study of human rights and political violence and suggest avenues for future research.

Theory

How does oil production influence the likelihood that states violate personal integrity rights? Oil, according to resource curse arguments, is associated with all sorts of negative outcomes, such as civil war (Collier and Hoeffler, 2001; Ross, 2004, 2006), stunted political development (Karl, 1997) and lack of economic development and diversification (Sachs and Warner, 2001; Shafer, 1994).³ Investigating the possible effect of a resource curse on repression is a natural extension of this body of work.

Mechanisms offered to explain the negative consequences of resources range from a declining manufacturing sector pushed out by rising natural resources leading to deindustrialization (the so-called *Dutch Disease*) to state-centered discussions that focus on the effects of natural resources and oil on state–society interactions. In building an argument relating oil production to state repression, we start with state-centered approaches for several reasons. First, recent models used to explain civil war and state collapse begin with this general framework (Snyder and Bhavnani, 2005). Thus our work builds on and relates to this body of work. Second, the state is a crucial actor to understand when examining violations of human rights. With respect to empowerment rights, for example, Egorov et al. (2009) argue that resource-rich leaders allow less press freedom than others, because the costs of losing power are greater in the presence of natural resource wealth than elsewhere. We submit that the state is a similarly crucial actor to understand when examining violations of personal integrity rights, and that understanding state-leader incentives and certain contexts that promote the use of violence can bring us closer to understanding how oil production influences this behavior. Prominent contextual explanations for political violence often focus on the incentives or opportunities for rebels to predate (Collier and Hoeffler, 2001). When considering

joint violence, such as civil war or intrastate conflict, focusing on rebels (or rebels and the state) strikes us as reasonable. When attempting to understand a context that generates state violence, we suggest that focusing instead on the state—and incentives faced by actors within the state—can better help us explain the variance in their violent acts.

Predatory state-centered approaches to political violence generally build on arguments related to state capacity, revenue and order (Cohen et al., 1981; Levi, 1989; Snyder, 2006; Snyder and Bhavnani, 2005; Thies, 2004, 2005). In contrast, contract theories generally explain how state support for property rights influences economic development. As Thies (2004) notes, several contract theories (Barzel, 2002; Volckart, 2000) offer explanations for state building that focus on how the state builds protections for property rights to generate order and peaceful equilibria.

We follow in the predatory tradition and thus make some similar assumptions. First, we assume that state leaders want to retain power and a monopoly on the forces of coercion within the state (Weber, 1994). Next, we assume that leaders need revenue to govern, to pursue their interests, and to achieve desired policy outcomes. State leaders attempt to maximize this revenue under constraints (Levi, 1989). These constraints can be related to how much the leaders of the state value the future, to difficulty in extraction and monitoring, and to their power vis-à-vis society and domestic rivals (Levi, 1989).

These assumptions are consistent with a large empirical literature on state repression, which argues that leaders consider both the benefits and costs of abuse. The major benefit of repression is the ability to remove threats to the regime (e.g. violent dissent, rebel groups) and thereby reassert a monopoly on the forces of coercion (e.g. Davenport, 1995; Franklin, 2009; Gartner and Regan, 1996; Gurr, 1988; Poe, 2004). In the short term, it is often a viable strategy when facing dissent as other methods of co-optation (increasing public goods, stimulating the economy, etc.) are more costly and take more time to quell dissent (see Lichbach 1987 for a related discussion).⁴ It is interesting, then, that one major cost of repression is a future challenge to state power: over time, repression has been shown to beget protest, dissent, political violence and revolution (e.g. Carey, 2006; Lichbach, 1987; Moore, 2000; Rasler, 1996; Shellman, 2006). The precise relationship between repression and dissent, particularly when establishing a long-term time horizon, is far from settled (Carey, 2006; Lichbach, 1987; Moore, 1998, 2000; Rasler, 1996; Young, 2008). However, one thing that is clear is that states and state leaders respond to domestic threats to their rule with violence. This relationship is so consistent that Davenport (2007a) calls it the ‘Law of Coercive Responsiveness’. We do not attempt to resolve the long-standing debate among scholars about the short- and long-term effects of the dynamic interaction between repression and dissent. Instead, we are primarily interested in using this framework to explain the short-term factors that impact the state’s choice to uphold or violate personal integrity rights.

To that end, we submit that another important cost of repression is lost revenue from citizen taxation, and that this cost is more immediate than the potential for future dissent. Above, we assumed that leaders need revenue to govern and maximize that revenue under constraints. States generally acquire revenue from two sources: citizens or national resources.⁵ How revenue is acquired influences the interaction between the state and its citizens (Bueno de Mesquita and Smith, 2009; Conrad and DeMeritt, 2013). As Bueno de Mesquita and Smith (2009) point out, acquiring taxes requires some kind of willingness from the population, whereas *unearned* or free resources, such as oil or fuel rents, do not have this constraint. Huntington (1991: 65) similarly argues that, “[o]il revenues accrue to the state: they therefore increase the power of the state bureaucracy and, because they reduce or eliminate the need for taxation, they also reduce the need for the government to solicit the acquiescence of its subjects to taxation”. For Huntington (1991), this can have perverse effects on potential democratization.⁶ Importantly, like democracies,

dictatorships vary in their reliance on their subjects for tax revenue and their use of repression, and often choose diverse methods of cooperation and co-optation (Gandhi and Przeworski, 2006). Oil revenues, therefore, should increase repression *independently* of regime type.

When state leaders rely on citizens for revenue, they face increased costs of monitoring. To make sure that citizens provide a reliable stream of income, states need to invest in infrastructure that ensures compliance, such as the Internal Revenue Service in the United States. They also can try to build quasi-voluntary compliance, or use methods that encourage citizens to cooperate with taxation. This is contingent on whether leaders keep their bargains with citizens, as well as whether other citizens comply. Targeted coercion is still used, such as putting citizens in jail for tax avoidance, but the system rests on citizens' beliefs that the system is fair and that leaders are credible (Levi, 1989).

In contrast, where revenue is acquired from the ground rather than from people, building this kind of compliance is not necessary.⁷ Where states do not have to build institutions to ensure compliance, appear credible or provide services, they will avoid doing so. In the language of Bueno de Mesquita et al. (2003), where the winning coalition, or the group necessary to maintain the leader in office, is small, the leaders do not need to invest in costly public goods. Instead, they can buy allegiance from the military or some other privileged group to maintain power.⁸ Institutions that affect the size of this winning coalition determine economic growth, war and many other important political outcomes (Bueno de Mesquita et al., 2003). However, as Karl (1997: 14) maintains, "the origin of a state's revenues influences the full range of its political institutions". In short, how states acquire their income can influence the style and quality of institutions and rules that govern society. Where oil and fuel rents provide revenue to state leaders, they rely on citizens less, and thus do not need to provide public goods (Bueno de Mesquita and Smith, 2009; Karl, 1997; Shafer, 1994).

When states rely on compliance, credibility and public goods (i.e. when they rely on citizens for income), repression is costly for two reasons. First, it reduces the credibility of the state and citizens' perceptions that they are receiving a fair deal when they contribute revenue to the state coffers. Citizens who observe repression may be less willing to contribute in the short term than they would be to give money to a state that respects its citizens' personal integrity rights. Second, it reduces revenue as states remove citizens from the set of active taxpayers through disappearance, killing and imprisonment. Citizens who experience repression are simply less able to contribute, since the abuse reduces their own earnings and therefore the amount of income on which they pay taxes. As the scale of repression increases, these costs increase.^{9,10}

However, when leaders can accrue revenue independent of their citizens (e.g. from natural resources like oil), they do not need to ensure compliance or provide costly public goods. They need not be concerned with the short-term loss in citizen-derived revenue that comes with repression, because these funds are supplanted by the resource-derived revenue from oil and fuel. In short, for leaders, reduced reliance on citizens for income lowers the immediate cost (i.e. lost revenue) of repression.

Consider the following stylized process: leaders consider the benefits and costs of repression, and develop beliefs about the expected utility of personal integrity abuse. As that expected utility increases, the leader's propensity to repress increases and observed repression increases as a result. All else being equal, natural resources including oil and fuel lower the costs of a repressive policy, thereby raising the leader's expected utility of abuse. This process, along with our preceding discussion, suggests the following testable hypotheses:

Hypothesis 1. *Ceteris paribus*, oil-exporting states use repression more than states that do not export oil.

Hypothesis 2. *Ceteris paribus*, a state's income from fuel rents covaries positively with its use of repression.

In the next section, we discuss how to operationalize concepts from this framework, how to test the above hypotheses, and which data and methods we use to do so.

Research design

To test our two hypotheses we use a time-series cross-sectional research design. The temporal domain of this study covers the period from 1977 to 1999.¹¹ Spatially, it incorporates a globally representative sample of 141 states. The list of included countries is presented in Table 1.

Dependent variable

Our primary dependent variable is the Cingranelli–Richards (CIRI) Personal Integrity Rights index (Physint; Cingranelli and Richards, 1999). This index is particularly useful here, because it incorporates the full set of rights we use to define repression: extrajudicial killing, torture, disappearance and political imprisonment. It ranges from 0 to 8, with increasing values representing increasing government respect for human rights. To make our results more intuitive, we reverse this coding so that higher values represent increasing personal integrity abuse.

Another available measure is the Political Terror Scale (PTS; Gibney and Dalton, 1996; Wood and Gibney, 2010). Like CIRI's Physint index, PTS is often used as an indicator of repression. This measure ranges from 1 to 5, with increasing values representing increasing levels of personal integrity abuse within a society. Two variables are available, including one based on Amnesty International reports (PTS (A)) and one based on reports from the US Department of State (PTS (S)). We focus on the results from CIRI because they comprise an index of four distinct component parts (one capturing the frequency of each form of abuse; Cingranelli and Richards, 1999), while PTS can be neither aggregated nor disaggregated into comparable components. That said, to determine the robustness of our results, we estimate our models using each of the dependent variables described above (CIRI, PTS (A), and PTS (S)). Consistency across these indicators should increase confidence in the results from the models.

Independent variables

Key explanatory variables. To study the effects of oil exporting states, we follow Fearon and Laitin (2003). Specifically, we use their binary indicator of oil exports, which equals one in country–years where more than one-third of all export revenues were derived from fuel. Next, we study the effects of fuel rents following Ross (2006, 2008). In particular, we use his measure of oil production value, rents per capita. Rents are measured as the total value of oil and natural gas production, less country-specific extraction costs (including the cost of capital). The variable reports this value, divided by midyear population, for each country–year in the data.

Other factors. We are interested in the effects of natural resources on personal integrity abuse. To this end, we also specify factors we expect to be potentially related to our key independent variables *and* our dependent variable (Achen, 2002; Ray, 2005). First, as discussed above, it is well established that democracy is positively related to respect for personal integrity rights (e.g. Davenport, 1999, 2007b; Poe et al., 1999; Young, 2009). We measure democracy using the Polity

Table 1. List of countries in estimation sample.

Afghanistan	Djibouti	Kyrgyzstan	Rwanda
Albania	Dominican Republic	Laos	Saudi Arabia
Algeria	Ecuador	Latvia	Senegal
Argentina	Egypt	Lesotho	Sierra Leone
Armenia	El Salvador	Liberia	Singapore
Australia	Estonia	Lithuania	Somalia
Austria	Ethiopia	Malawi	South Africa
Azerbaijan	Fiji	Malaysia	South Korea
Bahrain	Finland	Mali	Spain
Bangladesh	France	Mauritania	Sri Lanka
Belarus	Gabon	Mauritius	Sudan
Belgium	Gambia	Mexico	Swaziland
Benin	Georgia	Moldova	Sweden
Bhutan	Germany	Mongolia	Switzerland
Bolivia	Ghana	Morocco	Syria
Botswana	Greece	Mozambique	Tajikistan
Brazil	Guatemala	Namibia	Tanzania
Bulgaria	Guinea	Nepal	Thailand
Burkina Faso	Guinea-Bissau	Netherlands	Togo
Burundi	Haiti	New Zealand	Trinidad & Tobago
Cambodia	Honduras	Nicaragua	Tunisia
Cameroon	Hungary	Niger	Turkey
Canada	India	Nigeria	Turkmenistan
Central African Republic	Indonesia	Norway	Uganda
Chad	Iran	Oman	Ukraine
Chile	Iraq	Pakistan	UAE
China	Ireland	Panama	UK
Colombia	Israel	Papua New Guinea	Uruguay
Congo	Italy	Paraguay	USA
Costa Rica	Ivory Coast	Peru	Uzbekistan
Cuba	Jamaica	Philippines	Venezuela
Cyprus	Japan	Poland	Yemen
Czechoslovakia ^a	Jordan	Portugal	Yugoslavia
Democratic Republic	Kazakhstan	Romania	Zambia
Of Congo	Kenya	Russia	Zimbabwe
Denmark	Kuwait		

^aIncludes Czechoslovakia, the Czech Republic and Slovakia.

database (Marshall and Jagers, n.d.). The variable ranges from -10 to 10 , with lower values capturing increasing levels of autocracy and higher values capturing increasing levels of democracy.

Next, higher levels of per capita income proxy the state's overall financial and administrative capabilities and its overall level of development (e.g. Fearon and Laitin, 2003). These are affected by access to natural resources, and also correspond to lower levels of repression (e.g. Poe et al., 1999). We measure gross domestic product (GDP) per capita using data from the Penn World Tables and the World Bank, again following Fearon and Laitin (2003).

Third, insecure leaders are more willing to repress citizens than leaders who feel secure about their futures (e.g. Gartner and Regan, 1996; Levi, 1989; Young, 2009). We use the indicator from Young (2008) that measures job *insecurity* for a leader of a country.¹²

Fourth, as the size of the population increases, extracting resources via taxation becomes more difficult and the state is increasingly likely to repress citizens (Mitchell and McCormick, 1988). We incorporate this into our model via the natural log of midyear population for each observation in the data.

Fifth, and as discussed above, repression is often observed in response to dissent (e.g. Franklin, 2009; Moore, 2000; Shellman, 2006). We measure dissent using the Banks Cross-Sectional Time-Series Data Archive. Specifically, we create a count of the number of violent acts against the state (guerrilla tactics, riots and assassinations) occurring in each country–year in the data. Repression may also occur in the context of broader violent conflicts, including civil and international wars. To control for this possibility, we use a binary indicator from the Correlates of War project. The variable equals 1 in country–years experiencing civil and/or international wars (Sarkees, 2000).

Sixth, when the terrain is increasingly complicated to navigate, states have a more difficult time extracting resources from citizens via non-violent means. We capture this using a common indicator for difficult terrain: the log of the percentage of mountainous terrain in a state (Fearon and Laitin, 2003).

Finally, the longer a country manages to avoid repression, the less likely it is to suffer from repression again (Carey, 2010). In addition, previous repression increases future repression as state leaders continue policies that were effective in the past (Gurr, 1988). Thus, we include in the model a one-year lag of our dependent variable. Table 2 includes a description of all variables in our models, including sources and summary statistics.

Model specification

Since the dependent variable is categorical and ordered, we use ordered logit models. In the past, scholars studying human rights violations have used ordinary least squares (OLS) regression (Davenport and Armstrong, 2004; Poe and Tate, 1994; Poe et al., 1999). Since this modeling approach assumes that the dependent variable is continuous and normally distributed, using OLS on these data would lead to biased results. Whitten-Woodring (2009) and Young (2009) both use ordered logit and OLS and find that estimator choice does not drastically change the inferences for any of the key variables of interest. While OLS has a more straightforward interpretation, we focus on ordered logit and present graphs to help ease discussion of the results (Kastellec and Leoni, 2007). Graphs of the distribution for the dependent variables and models using OLS are available in the online Appendix. To deal with issues of correlation of errors within panels, we cluster the standard errors according to country (Rogers, 1993).

Results

To test Hypothesis 1, that oil exporting states are more repressive, we use the oil measure from Fearon and Laitin (2003) and three separate dependent variables for repression (CIRI, PTS (A), and PTS (S)). The results in Table 3 provide strong support for this hypothesis. Regardless of the dependent variable used, oil increases violations of personal integrity rights as measured by CIRI and PTS. This effect is both statistically and substantively significant across the three models in Table 3. To test Hypothesis 2, that increasing fuel rents lead to increased repression, we use an alternative measure: oil and gas rents per capita (Ross, 2008). The results are consistent with the

Table 2. Variable descriptions and summary statistics.

Variable	Description	Coding/range	Source	Mean	Median	Standard deviation
<i>DVs</i>						
PHYSINT	Government's violation of personal integrity rights	0 (low violations) to 8 (high violations)	Cingranelli and Richards (1999)	3.128	3	2.373
PTS_a	Government's violation of personal integrity rights	1 (low violations) to 5 (high violations)	AI via Wood and Gibney (2010)	2.585	2	1.150
PTS_s	Government's violation of personal integrity rights	1 (low violations) to 5 (high violations)	DoS via Wood and Gibney (2010)	2.383	2	1.152
<i>Key IVs</i>						
OIL	Oil exporter?	0 (no), 1 (yes)	Fearon and Laitin (2003)	0.145	0	0.355
FUEL RENT PC	Rents from oil and natural gas, per capita	0–23,229.14, in constant 2000 US\$	Ross (2006)	552.795	0.778	1336.275
<i>Controls</i>						
DEMOCRACY	Degree of institutional democracy	–10 (fully dictatorial) to 10 (fully democratic)	Marshall and Jaggers (2008)	1.210	3	7.611
GDPpc	Gross domestic product per capita	0.273–28.907, in constant 2000 US\$	Fearon and Laitin (2003)	4.586	2.605	4.712
INSECURE	Probability that a leader is removed from office	0 (not likely) to 1 (very likely)	Young (2008)	0.203	0.163	0.185
POP	Natural log of population	5.924–14.029	Fearon and Laitin (2003)	9.220	9.109	1.473
DISSENT	Violent dissident activity against the state	Logged event count, 0–2.94	Banks (1999)	0.348	0	0.568
WAR	Is the state involved in an inter- or intrastate war?	0 (no), 1 (yes)	Sarkees (2000)	0.108	0	0.310
MOUNTAINS	Log of the estimated percentage of mountainous area	0–4.557	Fearon and Laitin (2003)	2.014	2.282	1.468

Table 3. Estimated effects on personal integrity abuse.

	DV = Physint		DV = PTS (A)		DV = PTS (S)	
OIL	0.597*** (0.195)		0.432*** (0.158)		0.458*** (0.164)	
FUEL Rent PC		0.0001*** (0.00004)		0.00004** (0.00002)		0.0001*** (0.00002)
DEMOCRACY	-0.053*** (0.009)	-0.052*** (0.010)	-0.052*** (0.009)	-0.053*** (0.010)	-0.055*** (0.009)	-0.057*** (0.010)
GDPpc	-0.111*** (0.018)	-0.121*** (0.021)	-0.125*** (0.021)	-0.128*** (0.025)	-0.150*** (0.022)	-0.152*** (0.026)
INSECURE	0.001 (0.207)	0.091 (0.235)	1.054*** (0.355)	1.096*** (0.396)	0.435 (0.441)	0.514 (0.469)
POP	0.233*** (0.038)	0.245*** (0.039)	0.189*** (0.045)	0.199*** (0.048)	0.201*** (0.043)	0.210*** (0.046)
DISSENT	0.323*** (0.090)	0.295*** (0.092)	0.461*** (0.074)	0.445*** (0.074)	0.453*** (0.095)	0.437*** (0.095)
WAR	0.965*** (0.198)	0.887*** (0.192)	0.660*** (0.181)	0.622*** (0.174)	1.006*** (0.215)	0.962*** (0.212)
MOUNTAINS	0.077** (0.039)	0.080** (0.039)	0.098** (0.043)	0.096** (0.042)	0.049 (0.040)	0.046 (0.040)
REPRESS _{T-1}	0.893*** (0.043)	0.900*** (0.045)	2.043*** (0.098)	2.054*** (0.099)	2.220*** (0.092)	2.234*** (0.093)
N	1896	1893	2381	2378	2483	2480
PSEUDO R ²	0.3045	0.3035	0.4168	0.4157	0.4634	0.4620
WALD χ^2 (9 d.f.)	1227.68***	1225.95***	1173.43***	1185.16***	1147.81***	1162.42***
LPL	-3804.910	-2804.807	-2084.706	-2086.342	-1952.127	-1954.960

*** $p \leq 0.01$; ** $p \leq 0.05$; * $p \leq 0.10$, two-tailed tests.

All models are estimated via ordered logit.

Robust standard errors (clustered by country) in parentheses.

LPL, Log pseudo-likelihood. d.f., Degrees of freedom.

previous set of models—higher rents from oil and natural gas increase repression across the CIRI and PTS measures. Again, this result is statistically significant and substantively meaningful.

Similar to most previous work in this area (Davenport and Armstrong, 2004; Poe and Tate, 1994; Poe et al., 1999), increased democracy decreases human rights violations across the six models. Higher development, measured as GDP per capita, also decreases violations of personal integrity rights. Dissent, population, war, mountainous terrain and past repression are each consistently correlated with increased violations of human rights. The effect of insecure leaders is generally positive, but the results can only be distinguished from zero in two of the six models (using the PTS (A) measure as the dependent variable). Since results for the other indicators are consistent with previous studies, this increases our confidence in the results for the oil and fuel rents measures.

Substantive impacts of oil on repression

Because ordered logit coefficients are difficult to interpret, we created several figures (Figures 1 and 2) to show how changing the key independent variables influences the probability of being in

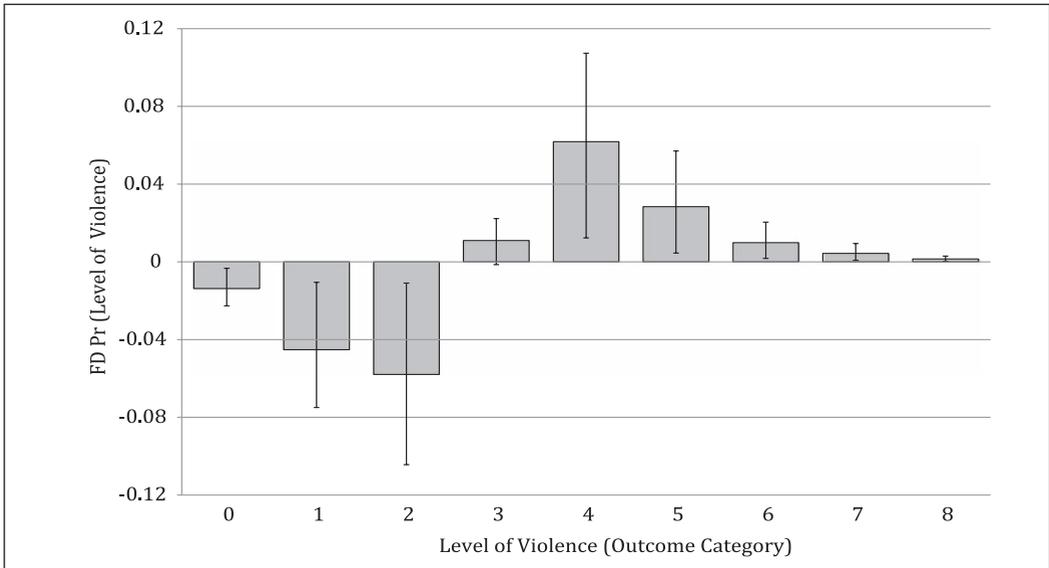


Figure 1. Predicted effects of exporting oil on personal integrity abuse. Reported values are predicted changes (first differences) in the probability of each level of violence, given a change from not exporting oil to exporting oil. All other variables are held at their means (if continuous) or medians (if ordinal or binary). Source: Table 3, column 1 (DV = CIRI).

each category of the CIRI and PTS scales.¹³ Figure 1 presents the predicted change in the probability of experiencing each level of repression on our inverted CIRI scale given a switch in oil from 0 (not an oil exporter) to 1 (oil exporter). Error bars representing 95% confidence intervals surround each prediction. For reference, Table 4 presents the different patterns of personal integrity abuse that accompany each scale score.¹⁴

Figure 1 demonstrates that being an oil exporter decreases the probability that a state applies a low level of repression. In particular, it reduces the probability of scoring a 0 on our CIRI scale by 1.4%, reduces the probability of scoring a 1 by 4.5%, and reduces the probability of scoring a 2 by 5.8%. Next, Figure 1 shows that becoming an oil exporter has no substantively significant impact on scoring a 3, since the 95% confidence interval contains zero. Finally, and as anticipated by Hypothesis 1, Figure 1 shows that being an oil exporter increases the probability that a state applies high levels of repression. Specifically, it increases the probability of scoring a 4 on our inverted CIRI scale by 6.2%, raises the probability of scoring a 5 by 2.8%, heightens the probability of scoring a 6 by 1.0%, escalates the probability of scoring a 7 by 0.4%, and hikes the probability of scoring an 8 by 0.1%. In short, Figure 1 demonstrates that becoming an oil exporter leads to higher levels of human rights abuse.

It is interesting that the effect of becoming an oil producer is strongest in the middle of the CIRI scale, in the range where moderate repression is applied. The strongest impact exerted by oil exporting is to increase (by 6.2%) the probability of scoring a 4, or experiencing common disappearances, some killing and torture, and no unlawful imprisonment. The second-strongest impact is to decrease (by 5.8%) the probability of scoring a 2, or experiencing some disappearances and killing but no unlawful imprisonment or torture. These directional effects continue, with attenuated influence, at the highest and lowest levels of repression. It appears that oil exporting affects the

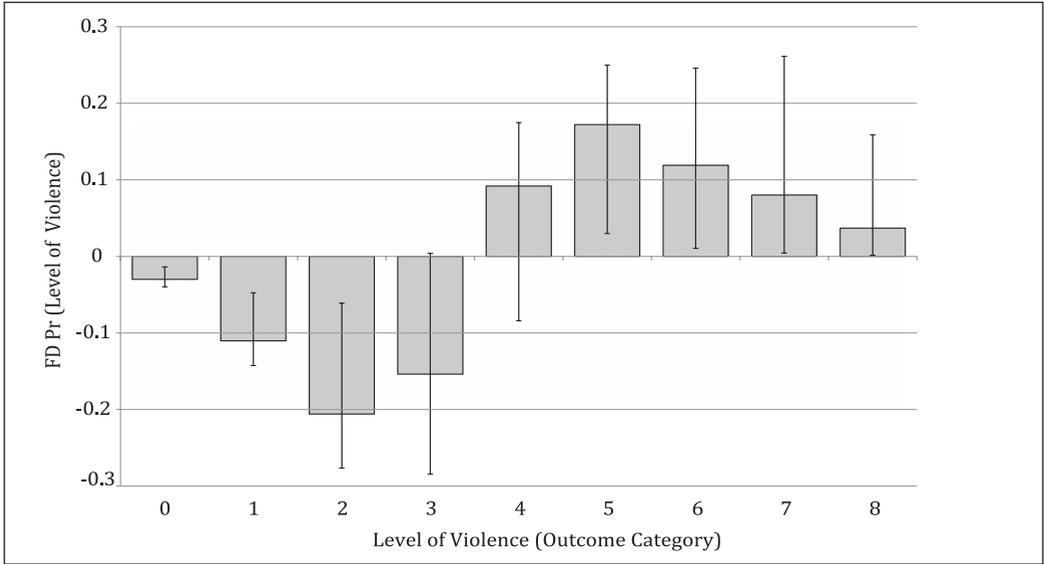


Figure 2. Predicted effects of fuel rents per capita on personal integrity abuse. Reported values are predicted changes (first differences) in the probability of each level of violence, given a min-max increase in oil and natural gas rents per capita. All other variables are held at their means (if continuous) or medians (if ordinal or binary).

Source: Table 3, column 2 (DV = CIRI).

likelihood of applying moderate repression more than it affects the likelihood of being an extremely violent (or extremely non-violent) state.

This result makes sense in the context of the repression/dissent framework. Leaders who do not rely on citizens for tax dollars can repress without paying short-term costs (i.e. lost revenue), but natural resources do not reduce the long-term cost of repression (i.e. future dissent). Instead, repressive leaders may face future violence regardless of their oil exports or fuel rents. Extant work shows that this future dissent becomes more severe as the initial repression is more severe (e.g. Carey, 2006; Rasler, 1996). To minimize these long-term costs, leaders may moderate the severity of repression even in the presence of revenue from oil.

Figure 2 offers a graph similar to Figure 1, but in this case the independent variable is the measure of oil and natural gas rents drawn from Ross (2008).¹⁵ Here, plotted values are the predicted change in the probability of experiencing each level of repression on our inverted CIRI scale given a min-max change in revenue per capita generated from fuel rents. These results are consistent with the previous graph. First, increasing fuel revenues lowers the probability of applying a low level of repression. In this case, it decreases the probability of scoring a 0 by 3.0%, lowers the probability of scoring a 1 by 11.0%, and suppresses the probability of scoring a 2 by 20.6%. Next, increasing fuel revenues has no effect on the probability of scoring either a 3 or a 4 on the inverted CIRI scale. Finally, and as anticipated by Hypothesis 2, increasing fuel revenues raises the probability of high levels of repression: the probability of scoring a 5 increases by 17.2%, the probability of scoring a 6 is inflated 11.9%, the probability of scoring a 7 is heightened 8.0%, and the probability of scoring an 8 goes up by 3.7%. Overall, Figure 2 demonstrates that generating increasing revenues from oil and natural gas leads to higher levels of human rights abuse.

Table 4. Physical integrity scale scores and patterns of state violations of particular personal integrity rights.

Scale score	State violation of personal integrity rights			
	Disappearances	Killing	Imprisonment	Torture
0	Absent	Absent	Absent	Absent
1	Occasional	Absent	Absent	Absent
2	Occasional	Occasional	Absent	Absent
3	Common	Occasional	Absent	Absent
4	Common	Occasional	Absent	Occasional
5	Common	Occasional	Occasional	Occasional
6	Common	Common	Occasional	Occasional
7	Common	Common	Common	Occasional
8	Common	Common	Common	Common

Source: Cingranelli and Richards (1999, Table 3).

As in Figure 1, the effects of fuel rents are strongest at more moderate levels of repression. In this case, the strongest influence of a min–max increase in fuel rents is to lower the probability of scoring a 2 by 20.6%. The second strongest impact is to increase (by 17.2%) the probability of scoring a 5, or experiencing common disappearances and some killing, unlawful imprisonment and torture. As above, the effects of increasing the revenue generated from fuel are attenuated when states are extremely non-violent or extremely violent. As with oil exports, the fact that fuel rents have a strong positive impact in the mid-range of repression—and not the highest part of the scale—makes intuitive sense. We believe that leaders who can repress without losing revenue in the short-term may well moderate that repression to limit the potential for long-term dissent.

How robust are these results?

Our statistical results suggest that oil and fuel rents are important influences on a state's willingness to violate personal integrity rights. We are concerned, though, with how sensitive the results are to changing the model specification. To assess the robustness of our central findings, we ask the following questions: do the impacts of oil and fuel rents remain when we control for regional effects? Do those impacts remain when controlling for demographic effects? Do they hold when we consider international influences? What about non-violent as well as violent dissent? Do the effects of oil and fuel rents persist if we conceptualize democracy—or the process through which it influences repression—differently? Do the results hold when we consider mixed regimes? Full statistical responses are available in the online Appendix; below, we briefly describe those results.

Geography and demography. We begin our robustness checks by investigating the effect of geography. In the central models (Table 3), we cluster our standard errors by country. If there are country-specific effects on oil, this approach will provide consistent standard errors and prevent within-panel autocorrelation from obscuring our insight. However, we wonder, substantively, whether geography might matter at the regional level. Specifically, we know that North African and Middle Eastern states draw above-average income from oil and fuel rents.¹⁶ We also know that these states experience above-average levels of repression.¹⁷ Therefore, we must consider the possibility that our results are driven by oil-rich, repressive North African and Middle Eastern states. We do this

by incorporating an indicator for North African and Middle Eastern states into our specification. Oil remains positive and highly significant across all three measures of repression; fuel rents per capita remain positively signed in all three models and achieve statistical significance in one. Even when accounting for geographic specificities, income from oil and natural gas increases human rights abuse.

As with the regional effects above, Muslim populations vary in known ways with both fuel and repression.¹⁸ Therefore, we must consider the possibility that our results are driven by states with large Muslim populations. We do this by including a measure of the Muslim percentage of each state's population, which we draw from Fearon and Laitin (2003). In all six models, across all three measures of repression and both measures of income from fuel, the effects of fuel remain positive and statistically significant. Even when accounting for the size of a state's Muslim population, income from oil and natural gas remain linked to increased repression.

International influences. Our goal in this paper is not to develop a comprehensive model of human rights violations, but instead to show how natural resources influence repression. For that reason, we do not engage international influences on repression as a central part of this work. That said, there is a growing literature on those international influences, and failing to account for them entirely runs the risk of producing biased insights into the relationship between resources and repression. Thus, we briefly consider the potentially confounding impacts of international law.

Existing work on the impacts of international law (e.g. Hafner-Burton and Tsutsui, 2005; Hathaway, 2004; Keith, 1999; Neumayer, 2005; Simmons, 2009) asks whether human rights treaties make a difference for leaders' tendencies to repress. If treaties are correlated with both repression and natural resources, omitting them from our analysis may lead to biased results (Achen, 2002; Clarke, 2005; Ray, 2005). We investigate this possibility in two ways. First, we examine the bivariate relationships between international human rights treaties and our resource measures. We focus on four global agreements: the International Covenant on Civil and Political Rights (ICCPR) and its optional protocol, and the Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) and Articles 21 and 22 of the same,¹⁹ and correlate binary measures of treaty (and protocol/article) ratification with our measures of oil exports and fuel rents per capita. The ratification variables come from Neumayer (2005), and show little cause for concern: the average correlation between oil exports and treaty ratification is -0.0155 (min = -0.0155 , max = -0.0747), and the average correlation between fuel rents per capita and treaty ratification is -0.1006 (min = -0.0537 , max = -0.1529).

Second, we respecify our model incorporating treaty ratification into the multivariate analyses. In this sample, only one ratification variable significantly relates to repression: states that ratify the CAT appear to repress at higher rates than states that do not ratify the same.²⁰ This is in line with a discussion in the empirical literature about the weak, and often unintended, consequences of international law for human security (e.g. Hafner-Burton and Tsutsui, 2005; Hathaway, 2004; Hill, 2010; Simmons, 2009). Accounting for international law has no impact on our core results: natural resources remain positively and significantly related to repression in all models. In these models, international law—while a potentially important influence on human rights abuse—does not confound the relationship between natural resources and that abuse.

Functional relationships between democracy and repression. As discussed above, the relationship between democracy and repression is widely demonstrated. There is, however, a debate about whether the functional form of that relationship is linear, curvilinear or threshold-based (Davenport and Armstrong, 2004). To investigate the effect of each possibility on our results, we use binary

decomposition and examine the effect of each level of democracy as an independent regressor. With respect to democracy, the results across our six models share much in common. In each model, the effects of democracy from -10 to 0 are indistinguishable from each other and from zero. And in each model, the effects of democracy from 6 to 10 were negatively related to human rights abuse. These results are highly consistent with those found in other, similar studies (see, for example, Young, 2009). With respect to oil, decomposing democracy had no effect on our results: across all three measures of repression, states deriving at least a third of their export revenues from oil had systematically higher levels of abuse than other states. With respect to fuel rents per capita, the binary decomposition changed our results such that rent's coefficient remains positive, but loses statistical significance.

As a second robustness check, engaging democracy, we collapse the decomposed Polity variables within each model into linear scales that best fit the data according to both Bayesian and Akaike information criteria.²¹ Our results with respect to democracy do not change, remaining negative and significant in each of our six models. This change has no impact on our central results, either. In all six models, our measure of oil remains positively and significantly related to human rights abuse. Overall, our treatment of democracy improves model fit, but does not affect our insights with respect to oil. Regardless of their level of democracy, states deriving significant revenues from oil have higher levels of repression than other states.

Democratic institutions and dissent. Our next sensitivity analysis begins with the suggestion, drawn from Davenport (2007b), that the best way to model repressive behavior is through the interaction of political institutions and dissent. To see whether our findings hold when this is considered, we replace our indexed measure of democracy with measures of two institutional characteristics: the competitiveness of political participation, and executive constraints. Each characteristic is a concept variable in Polity IV; political competition captures party competition and the regulation of participation, while executive constraints captures the extent of institutionalized constraints on the decision-making powers of the executive. Following Davenport (2007b), we interact each institutional characteristic with civil war to create a context in which domestic institutions and violent dissent interact in their impacts on repression. We also create a context in which competition, constraints and violent dissent all interact in their influence on repression. Our results are unaffected by these new contexts: in all models interacting democratic institutions with violent dissent, natural resources remain positively and significantly related to personal integrity abuse.

Nonviolent dissent. Above, we operationalize dissent as citizen-driven violence including guerrilla tactics, riots and assassinations. Here, we consider the possibility that governments also respond to non-violent dissent with repression. We measure this concept by summing the numbers of peaceful anti-government demonstrations and general strikes provided in the Banks dataset described earlier, and include that variable as an additional regressor in each model. As expected, non-violent dissent is positively related to repression in each of our models. It also makes intuitive sense that the magnitude of the effect is smaller than the estimated effect of violent dissent behavior. Importantly, and again, including this new variable did not change our central result: natural resources remain positively and significantly related to abuse in all six specifications.

Mixed regimes. Finally, we consider the potential link between mixed regimes and repression. A large literature argues that anocracies—states neither fully democratic nor fully autocratic—do not have the possibilities of peaceful collective action present in democracies, and also lack the effective coercive apparatus characteristic of autocracies. Given this, anocracies may be more prone to

political violence than other regimes (e.g. Abouharb and Cingranelli, 2007; Bueno de Mesquita and Smith, 2009; Ellingsen and Gleditsch, 1997; Fein, 1995; Muller and Weede, 1990; Opp, 1994; Regan and Henderson, 2002; Vreeland, 2008). We account for this possibility in three ways. First, we respecify the model in Table 3 including a squared version of the Polity index we use to capture democracy. This allows the relationship between regime type and repression to assume the inverted-U shape described above; support for the claim that anocracies repress more than democracies and autocracies would lead to a negative, and statistically significant, estimated coefficient on that squared term. As expected, coefficients on the Polity index and its squared term are negative and statistically significant in all six models.

Second, following Fearon and Laitin (2003), we use the Polity index to generate three dummy variables capturing full autocracy, full democracy and mixed regimes.²² Respecifying our model, we replace the index with these binary indicators of democracy and mixed regimes. We expect democracies to repress less, and anocracies more, than our autocratic reference category. We find support for the first expectation; our binary measure of democracy is negative and statistically significant in all six models. The result on mixed regimes, however, is less encouraging: the estimated coefficient is positive (as expected) in four of the six models, but attains significance in none.

Third, we are sensitive to Vreeland's (2008) argument that the Polity index contains component variables that capture political violence, and that these characteristics—rather than institutional regime type—may drive extant empirical support for the *more murder in the middle* hypothesis. To that end, we construct a new index that omits the components including political violence (and thus includes only components associated with the executive). This variable is identical in construction to the variable created by Vreeland (2008),²³ and like Vreeland we call it X-POLITY. Including X-POLITY and its squared term in our model is our third consideration of the link between mixed regimes and repression, and we find a weaker version of the Polity-based anocracy results: the associated coefficient is negative in all six models, but is only significant in four of the six.

Overall, our treatment of anocracy yields mixed results. Squaring the Polity index produces six statistically significant relationships to support the claim that mixed regimes repress more than other states. Accounting for mixed regimes with a Polity-based binary indicator does not allow us to reject the null hypothesis that mixed regimes repress no more or less than fully autocratic states. Using a measure of domestic institutions that is bereft of reference to political violence yields mixed support for the claim that mixed regimes repress more than other states. Perhaps more important to the current effort, considering mixed regimes in no way affects our central findings. Across all 18 models described above (six including Polity and its square, six including binary indicators and six including X-POLITY and its square), oil exports and fuel rents per capita remain positively and significantly related to repression.

Conclusion

A strong body of empirical work has linked domestic threat and political institutions to increased violations of human rights (Davenport, 2007b; Davenport and Armstrong, 2004; Poe and Tate, 1994; Poe et al., 1999). Even when controlling for these factors, we find that states that rely on oil and fuel rents for income are more likely to repress than other states. Although we have focused on the state and its incentives, we expect that our results should hold even with a more complete account of dissident incentives for violence.

Our results suggest strong support for the contention that oil has a direct effect on repression. Our modeling strategy, however, did not investigate whether oil has an indirect effect on repression

or other negative societal outcomes. Since oil increases repression and recent work has found that repression increases the likelihood of civil war (Young, 2013), oil should also have an indirect impact on civil war onset. As states use more repression, they fulfill half of the necessary components for generating civil war. Most scholars have looked only at direct effects and found positive results (Collier and Hoeffler, 2001; Fearon and Laitin, 2003; Ross, 2006), conditional upon how oil is operationalized.²⁴ Our results suggest that the indirect effects may be more robust and possibly as pernicious.²⁵ Most of the previous mechanisms explaining how oil is linked to civil war have focused on the rebel side: oil and fuel rents make the prize of state control that much more attractive. Our argument is more state-centered. Previous state-centered arguments linking oil to civil war focus on state weakness (Fearon and Laitin, 2003), but we suggest that the mechanism is related to decoupling the source of revenue from the people. In sum, we suggest that, all things being equal, two states that have similar political capacity should repress similarly. If one exports oil or relies on fuel rents for revenues, we would expect this country to repress more.

Next, our goal has been to develop and test hypotheses about the effects of natural resources on repression, writ large. Repression is a multidimensional concept, so scales that measure the concept necessarily combine different types of abuse (Abouharb and Cingranelli, 2006, 2007, 2009; McCormick and Mitchell, 1997). In our Appendix, we present models disaggregating repression into its components: extralegal killing, torture, disappearances and unlawful imprisonment. We find that being an oil exporter increases the likelihood of all four types of abuse. Increasing fuel rents covaries positively with the probabilities of unlawful killing and torture, but has no statistically significant impact on the probabilities of disappearances or political imprisonment. This work can inform future studies on the relationship between natural resources and specific types of human rights abuse. One plausible possibility is that leaders see types of repression as a set of options in a single arsenal, and choose the repressive method(s) that they expect to achieve a desired goal while minimizing costs. If methods of abuse are substitutable in this way, then a promising avenue of future research might investigate how the costs of each method compare with each other, and how the presence of natural resources affect those relative costs.

Prima facie, our argument seems to apply to all forms of non-tax revenue including, for example, foreign aid, trade and loans. While it is true that these forms of revenue are not derived from citizens, they differ from natural resource wealth in that leaders depend on third parties for their receipt. Introducing this outside actor may change leaders' beliefs about the costs of repression, thereby complicating the causal process. Recent empirical findings regarding the relationship between international income and repression are similarly complex. Some extant work shows that reliance on such revenue increases the likelihood and severity of repression (e.g. Abouharb and Cingranelli, 2006, 2009). Other work suggests that income from international sources may actually mitigate repression (e.g. Ahmed, 2010, 2012; Hafner-Burton, 2009). A third set of findings implies that the effects of international income on abuse depend on intervening factors including foreign capital dependence (Franklin, 1997) and economic value (Barratt, 2004).²⁶ Finally, the relationship may involve endogeneity, since international actors punish repressive leaders by reducing non-tax revenues from aid, trade and FDI (Barry et al., 2013; Wright and Escriba-Folch, 2009). Taken together, these findings present a path for future research: what is the relationship between international income and state repression? What mediating factors influence that relationship, and how? Most relevant for our purposes, can international income be seen (like oil and fuel) as a form of non-tax revenue that increases repression? If so, under what conditions?

Recent events in the Middle East and North Africa offer some support for the role oil plays in repression. In states like Egypt and Tunisia, where oil is not a major source of revenue, repression was comparatively mild relative to the events that occurred throughout Libya. If our argument is

correct, repression was more likely and more severe in cases where the government was able to accrue revenue from the earth rather than from the people.

Even with robust empirical support, this theory is probabilistic rather than deterministic. Not all states that repress have oil. Consider China, which in 1989 chose to repress despite its reliance on citizen revenue. Likewise, not all states with oil will repress. Consider oil-rich Saudi Arabia, which chose to redistribute to its citizens. In our theoretical context, redistribution is more costly in the short term, but does not raise the risk of future dissent like repression. Given natural resources, redistribution is a plausible alternative means of co-opting the opposition (e.g. Morrison, 2009). When might redistribution occur, and how might it relate to leaders' propensities to repress? How might it explain exceptions like China and Saudi Arabia? One important difference between the two is population size. Mean per-country population is around 34 million; Saudi Arabia's population is slightly smaller at around 27 million, while China's population (around 1.3 billion) is the world's largest (WDI, n.d.). With oil wealth and a small population, Saudi's leaders could redistribute successfully and avoid the long-term cost of repression. Lacking natural resources and having many citizens, China's leaders could not distribute enough resources to satisfy the opposition, and instead responded with abuse. This suggests that population size influences the choice among repression and redistribution. In this paper, we control for population and find (as expected) a strong positive relationship with repression. Is this an additive relationship that is in some cases substantively stronger than resource revenue? Or, might the effect of oil on repression depend on a state's population? Most generally, when will states redistribute rather than repress, and how do the costs of redistribution affect leaders' decisions vis-à-vis repression? These strike us as promising areas of future research.

From a policy perspective, these results add to a long list of negative implications regarding relying on oil as a development strategy. OPEC's founder, Juan Pablo Pérez Alfonzo, suggests that oil is "the devil's excrement" (Karl, 1997: 4). Our findings suggest that oil may also indirectly harden autocracies by institutionalizing repression as a strategy of order, making Pérez Alfonzo's comment all the more prescient.

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Notes

1. *Authors' note:* An earlier version was presented at the 2009 meeting of the American Political Science Association. We are grateful to Christian Davenport, Amanda Murdie and several anonymous reviewers for thoughtful comments on previous drafts, and to Christine Balarezo and Steve Liebel for research assistance. Online Appendix, data and replication files are available at psci.unt.edu/~demeritt/research.html
2. Repression, or human rights abuse, is the violation of personal integrity rights including extrajudicial killing, torture, disappearance and political imprisonment (Cingranelli and Richards, 1999; Poe and Tate, 1994). We use the terms repression, human rights abuse/violation and personal integrity abuse/violation interchangeably.
3. Haber and Menaldo (2011) revisit the resource curse and find that natural resource wealth does not promote dictatorship over the long run. Their results call the longitudinal effects of natural resources on regime type into question. Here our expectations are static and deal with resources' impact on human rights abuse: states that earn more revenue from oil and natural gas should repress at higher rates than states that earn less.
4. We consider the implications of the option to redistribute in the Conclusion.

5. We assume, for simplicity, that these are the major sources of revenue and thus the two ways that states can acquire income. Of course, states can also increase revenues through foreign aid, IMF loans and other external sources. Adding this external environment adds a layer of complexity. In the Conclusions, we discuss how relaxing this assumption might influence our expectations.
6. In the econometric models below, we explore this possibility by controlling for democracy. If oil revenues covary with democracy, and democracy is strongly correlated with human rights violations, this effect of oil revenues on human rights violations may be shown to be spurious.
7. Snyder and Bhavnani (2005), among others, distinguish between *lootable* and *non-lootable* resources and their varied impacts on the probability of civil war. This distinction is less important for our argument as we do not think that lootable resources provide rebels with an opportunity to be repressed. We think either form of resource should decrease the dependence of the state on revenues from its citizens.
8. Ross (2001) refers to the type of state that buys allegiance from oil or fuel rents as *rentier*.
9. Alternatively, this wealth from oil and/or fuel rents could be used to pay off citizens and actually reduce repression. This is an alternative hypothesis that we can implicitly test as it expects a different sign for our key explanatory variable.
10. Beyond not needing to provide public goods, having increased unearned resources is also likely to decrease the provision of such goods. Formal models and opportunity arguments (e.g. Bueno de Mesquita and Smith, 2009; Smith, 2008) suggest that free resources increase the probability of revolutionary demands and influence the subsequent government response. Most important for our argument, this work suggests that leaders facing revolutionary threats may contract or expand public goods (including personal integrity rights). Whether leaders restrict or increase these rights depends, in part, on how they acquire resources. Leaders whose resources do not depend on citizen input (e.g. oil) contract the provision of public goods (in part by increasing repression) in the face of revolutionary demands, while leaders whose income depends on citizens respond to such demands by expanding public goods (in part by decreasing repression). In short, as the level of free resources increases, leaders reduce public goods provisions to mitigate the possibility of rebellion (Bueno de Mesquita and Smith, 2009; this effect should be strongest in small winning coalition settings—see Smith (2008) for an exposition). *Core* public goods, such as human rights (civil or political), may be a casualty as free resources to the state increase.
11. This domain changes slightly across dependent variables. The Political Terror Scale is available beginning in 1977, while the CIRI data begin in 1982.
12. In short, the measure is created using parametric survival models to estimate the hazard rate of losing office for a leader in a given country–year with a given set of covariates. This measure is a replication and extension of a measure originally created by Cheibub (1998). The leader data used to predict job insecurity comes from Bueno de Mesquita et al. (2003). We also tried a measure built from the Archigos data set (Goemans et al., 2007). Results were similar.
13. All predictions were generated using CLARIFY (King et al., 2000), and all variables other than oil (in Figure 1) and fuel rents (in Figure 2) are held at their means (for continuous variables) or medians (for ordinal and dichotomous variables).
14. This table is adapted from Table 3 in Cingranelli and Richards (1999: 414).
15. Also note the scale change as compared with Figure 1: there, the y -axes range from -0.12 to 0.12 . To accommodate larger effects and wider confidence intervals, this figure's y -axes range from -0.3 to 0.3 .
16. In our data, 10% of states outside North Africa and the Middle East derive at least a third of their export revenues from fuels. In North Africa and the Middle East, 45% of states do the same. Similarly, the average level of fuel rents per capita in all non-North African or Middle Eastern states is 134.70. In North Africa and the Middle East, average fuel rent per capita is 3063.62.
17. In our data, across all three measure of repression, abuse in North African and Middle Eastern states is higher than abuse in the rest of the world. Average CIRI personal integrity abuse in North Africa and the Middle East is 3.97; in the rest of the world, average abuse is 3.16. Similarly, the average PTS (S) score in North African and Middle Eastern states is 2.96, while the corresponding average in the rest of the world is 2.60. Finally, the average PTS (A) score in the region is 2.65; in the rest of the world, average PTS (A) abuse is 2.44.

18. With respect to fuel, Muslims make up an average of 22% of the population across states deriving less than a third of export revenues from oil. Across states deriving at least a third of their export revenues from oil, Muslims make up an average of 54% of the population. With respect to repression, average personal integrity abuse on our flipped CIRI scale in states where Muslims make up less than half the population is 2.99. In states where Muslims make up at least 50% of the population, average CIRI personal integrity abuse is 4.02. Repression measured via PTS shows a similar pattern, where states with higher Muslim populations experience systematically higher levels of repression.
19. The ICCPR is considered “the most ambitious human rights treaty” (Goldsmith, 2000: 329), and its First Optional Protocol submits states to additional monitoring provisions. The CAT is more detailed and specific than the ICCPR, banning torture under all circumstances, and Articles 21 and 22 allow states to opt into provisions similar to those of the ICCPR’s First Optional Protocol. For a detailed discussion of these treaties and their use as proxies for the international legal human rights regime, see Neumayer (2005: 937–938).
20. Hill (2010) finds a similar result using propensity score matching techniques.
21. See Young (2009: 296) for a more detailed explanation of how this is done.
22. We define full democracy as $Polity > 6$, full autocracy as $Polity < -6$ and anocracy (or mixed regime) as $-6 \leq Polity \leq 6$. Changing the cut points to (negative)5 and (negative) 7 had no impact on our results.
23. In fact, we created the index using replication code from Vreeland (2008). It varies from -6 to $+7$, with higher values indicating higher levels of democracy.
24. Ross (2006) suggests that various mechanisms explain this association.
25. See Conrad and DeMeritt (2013) for more on this possibility.
26. We respecified our main models including controls for bilateral and multilateral foreign aid as a percentage of GDP, and our own results (reported in the online Appendix) are most in line with Ahmed (2010, 2012) and Hafner-Burton (2009). We found that bilateral aid had no significant effect on repression, while multilateral aid exerted a statistically significant negative impact in all six models. Importantly, including these variables did not change our core result: our oil measures remained positive and significant in all models.

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