Natural Resources, Weak States and Civil War

Can Rents Stabilize Coup Prone Regimes?

Cristina Bodea

The World Bank
Poverty Reduction and Economic Management Network
Economic Policy and Debt Unit
May 2012

Abstract

This paper argues that state weakness is broader than implied previously in the civil war literature, and that particular types of weakness in interaction with natural resources have aggravating or mitigating consequences for the risk of civil war. While in anocracies or unstable regimes natural resources can be expected to increase the risk of civil war, we suggest that resource wealth allows weak leaders to stabilize their relationship with their inner elite circle. In particular, for regimes at risk

of coup d'état, the availability of substantial resources is more likely to be channeled in ways that deter rebellion, plausibly countering the grievances generated by natural resources and rebels' viewing of such resources as a prize for taking over the state. Data from 1946–2003 and multiple empirical operationalizations broadly support our argument. These findings are consistent with work showing that resource rents can induce stability in state - society relationships.

This paper is a product of the Economic Policy and Debt Unit, Poverty Reduction and Economic Management Network. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at bodeaana@msu.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

**Natural resources, weak states and civil war:
Can rents stabilize coup prone regimes?***

Cristina Bodea**

JEL Classifications: D72, D74, Q34

Key Words: Civil war; Natural Resources; Weak state; Coup d'etat

* This research was supported by the Economic Policy and Debt Department, the World Bank, through a grant from the Governance Partnership Facility (GPF). I have received helpful comments from Sona Varma, Philip Keefer, Michael Colaresi, Corwin Smidt and the Junior Faculty group at MSU's Political Science Department. I thank James Fearon for sharing his data. Chunho Park contributed with research assistance.

** Assistant Professor, Department of Political Science, Michigan State University, East Lansing, MI. bodeaana@msu.edu

1. Introduction

The last decade has seen significant discoveries of oil and gas in Sub-Saharan Africa. In 2007 British Petroleum estimated that Africa had the third largest global oil reserves (Omgba 2009). Also, Ross (2012) reports that between 1998 and 2006, 19 new countries became oil and gas exporters, of which most were low and middle income countries. In the future, at least 15 new countries (most in Africa) are likely to join the list including, Ghana, Guinea, Liberia, Mali, Senegal, Sierra Leone, Tanzania, Togo and Uganda. At the same time, Africa has been plagued by political instability and violence, in particular civil war. Close to fifty percent of all large civil wars in the 1990s have flared up in Sub-Saharan Africa (Fearon and Laitin 2003: 13 out of 31). In the same period, the sub-continent also saw about forty percent of all coup d'état and attempted coups (Belkin and Schofer 2003: 19 out of 49) and about thirty-five percent of the country years of the decade are characterized by political regime instability (Polity IV).

Should it be a concern that new discoveries of oil and gas occur in poor countries with problematic governance? Natural resources have been linked to a series of negative outcomes like economic decline, corruption and autocratic rule (McNeish 2010). In the study of civil conflict, the bulk of research finds a positive effect of natural resources on war onset, in particular for oil and some measures of diamond production (Fearon and Laitin 2003, Humphreys 2005, Ross 2006). Still, some contrasting work suggests that resource rents can, in fact, induce stability in the state - society relationship (Smith 2004, Morrison 2009, Basedau and Lay 2009, Fjelde 2009). In this paper we point to the relatively low prevalence of war in resource rich countries (Ross 2006) and suggest that the relationship is likely to be context driven by another condition linked to the risk of civil conflict, namely the weakness of the state. Our focus

is on *political weakness* and we investigate whether the presence of natural resources exacerbates, or, potentially, mitigates the risk that weak leaders are challenged by insurgents.

Broadly, we take political weakness to imply conflict among social groups and a transitory arrangement for the allocation of political power into the future (Acemoglu and Robinson 2006). In this set-up, leaders have a credibility problem both vis-à-vis outsider opposition groups, and the insider elites supporting the regime (Keefer 2010, Smith 2008). In practice *both problems may coexist* and increase the chance for civil conflict, yet, we argue, *they are likely to be affected differently by natural resource endowments*. On the one hand, such resources have the potential to further aggravate the problems of politically weak leaders: They aggravate grievance by increasing relative deprivation; bolster collective action within outsider groups by providing a focal point for popular dissatisfaction and making capturing the state or seceding more attractive; make financing of rebellion easier; and allow leaders the resources to invest in mechanisms to keep other groups from revenue sharing into the future. Still, natural resource exploitation also generates substantial rents and regimes that are primarily weak because of coup threats from elite insiders, can plausibly use those rents to mitigate the risk of rebellion: While coup risk poses a wedge between leaders and the military, resource rents allow leaders to be financially able to bribe the security apparatus. This strategy is not necessarily optimal for leaders to insure loyalty, but at least coup threatened regimes are keenly aware of the need to keep their military in check and would-be rebel leaders are likely to face similar problems of opportunism in recruiting when natural resources are abundant; Most importantly, regimes at risk of coup d'état thrive on rent distribution and develop an understanding of the kind of ruling coalition they need to assemble and how to spend their resources in order to survive. *We test the following hypotheses:*

Incoherent, unstable, or, more generally, regimes with credibility issues vis-à-vis opposition

groups are further destabilized by natural resources, increasing their risk of civil war; However, leaders can purchase their way out of credibility problems vis-à-vis their inner elite circles, so resource wealth reduces the chance of civil war for regimes at risk of coup d'état.

There is no consensus on the definition and measurement of our key variables - civil conflict, natural resources and state weakness. Therefore, our research design tests the theoretical account using multiple empirical operationalizations. Given this variety of empirical specifications, our findings are relatively robust and reinforce several of the results found in the literature. Namely that state weakness in the form of political instability and mixed political regime precipitates the risk of conflict in countries rich in oil and diamonds. In addition, we find a similar effect in countries with a history of popular rioting, ethnically fractionalized countries and countries excluding large segments of the population from governing decisions. Another novel finding is that, for coup prone regimes, natural resource abundance can actually mitigate conflict risk.

This article's contribution is threefold: In the study of civil conflict both state weakness and resource endowments have been shown to increase the risk of civil war onset. Here, we bring attention to the role of state weakness resulting from the interaction of leaders and their inner elite circle, i.e. coup risk. This is important because resource endowments may in fact reduce the risk of civil war for such regimes, a result similar to how such resources generate more broadly political regime stability (Smith 2004, Morrison 2009, Ulfelder 2007, Omgba 2009). Further, new work including Smith (2008) and Acemoglu et al. (2009) derive theoretical hypotheses about the strategies pursued by leaders facing threats from both outside groups (civil war, revolution) and insider elites (coup) when resource rents are available. This paper connects such hypotheses to the literature on civil war onset and brings empirical evidence for the role of

resource rents. Finally, empirically, we use relatively unexplored proxies for state weakness like the risk of coup d'état and a history of violent rioting.

The paper proceeds as follows: Section 2 discusses the link between the civil war and both natural resources and state weakness; it also derives our theoretical hypotheses. Section 3 describes the research design and data. Section 4 presents the statistical models and discusses the findings. Section 5 concludes.

2. Review of the literature and theory

Both state weakness and resource endowments have been shown to increase the risk of civil war onset and we outline the main results of earlier work. We then proceed in two steps: First we argue that state weakness is broader than implied previously and emanates from the inability of leaders to retain the allegiance of different social groups, both in the opposition and within a narrow elite circle. Second, we argue that particular types of weakness in interaction with resource wealth have different consequences for the risk of civil war. That is, the presence of resources can exacerbate, or, potentially, mitigate the risk that weak states slide into civil war.

2.1 Natural resources, weak states and civil war

Collier and Hoeffler (1998) and Fearon and Laitin (2003) lay the ground work for the quantitative study of civil war onset, including the role of natural resources. The subsequent literature (Humphreys 2005, Lujala et al. 2005, Ross 2006, Lujala 2010) moves to better understand the causal links between such resources and conflict and to provide empirical measures able to discriminate among causal mechanisms. Given the empirical measures available, research has produced several findings: oil (export dependence dummy, dummy for production, onshore oil rents) and diamond production (primary diamond rents, secondary diamond production post the cold war, secondary diamond production for smaller scale violence)

are associated with the onset of civil war. The robustness of these results is in some cases fragile to alternative definitions of civil war onset, the methodology and the operationalization of the natural resource variable.

While a good amount of evidence indicates that oil and diamond production is related to the risk of civil conflict, the data also shows that a significant proportion of resource rich countries are not experiencing civil conflict: For example, in the 1990s between 20% and 40% of diamond rich states and 15% to 20% of oil rich states were at war (Ross 2006, pp. 268-269). This relatively low prevalence suggests that the relationship is more complex. Already in 2005, Collier and Hoeffler consider that clarifying the circumstances when resource rents contribute to civil war ignition is a “key research agenda” (p. 627). And, several studies provide important results: Humphreys (2005) suggests that the impact of natural resources depends on the strength of state institutions (political instability, coherence of political institutions). He finds that the presence of oil production significantly increases the likelihood of civil war in weak states and may lower conflict risk in strong states. Lujala et al. (2005) find that weak states producing primary diamonds are at higher risk of civil war onset and that the production of secondary diamonds increases the chances of ethnic civil war in ethnically diverse countries. Morrison (2010) shows that oil rents increases the risk of civil conflict only in low state capacity countries.

The literature identifies important factors that not only affect the likelihood of civil war but, we argue, are also likely to be conditioned by natural resource abundance. One condition that figures prominently in the determinants of civil war is the weakness of the state. Fearon and Laitin (2003), for example, argue that states that are financially, bureaucratically or politically weak make an attractive target for rebellion. The key reasons lie with the inability of the state to

control remote areas and have effective counterinsurgency strategies.¹ It has become a standard argument that a source of state weakness and lack of credibility vis-à-vis opposition groups and, more specifically would-be rebels, originates in the incoherent political organization of states mixing authoritarian and democratic features. And, anocracies (mixed regimes or semi-democracies) have been showed to be at higher risk of civil war (Hegre et al. 2001, Fearon and Laitin 2003). In particular, anocracies can use both repression and openness to govern, leading to grievances as well as to the possibility of mobilization (Hegre et al. 2001, p 33). That is, semi-democracies generate lower perceived costs of rebellion (Muller and Weede 1990) and, at the same time, embolden the demands of opposition and the perceived gravity of threat posed by these demands (Regan and Henderson 2002). The result is that in semi-democracies, the threat of repression fails to generate a deterrent effect similar to that of strong dictatorships, leading to the need to actually engage in more repression and violence. Instability on the other hand creates volatility, disorganization and short horizons which can be perceived as opportunities for rebel leaders (Fearon and Laitin 2003, Englebert and Ron 2004).

More broadly, anocracies can be thought of as switching regimes in which leaders engage alternatively elites (via rents or confiscation of rents) and the larger society (via public goods provision or repression). The interaction of leaders and social groups in mixed regimes lacks credibility into the future due to the transitory nature of power relations among social groups

¹ Hendrix (2010) surveys the related facets of the state weakness concept: the ability to deter challengers with force either by putting the military on the ground or by collecting information about opposition groups; the related capacity to enforce property rights; the ability to extract revenue; the degree to which the state uses coherently either force or accommodation to govern.

(Acemoglu and Robinson 2006). Such leaders have a difficult time consolidating their ruling coalition, be it either in an inclusive or a narrow fashion, thus inviting challenges to their power.

Also broadly, Keefer (2008) argues that countries with leaders that are not able to make credible promises to large segments of the population are more likely to see a breakdown in normal politics and recourse to violent contestation of political power. In his theory countries are weak and violence occurs both because only credible leaders can generate the kind of broad public good provision that would reduce grievance and because only such leaders can generate enough support from groups that are supposed to help fight rebellion. Weakly credible leaders lack institutions to constrain their choices and may choose existing social lines of demarcation like ethnicity in order to build support. The costs of engaging in ethnic politics are low because of the shared language and culture within ethnic groups or because co-ethnics tend to trust each other more due to interaction and information exchange (Fearon and Laitin 1996). In Keefer's account, the lack of political credibility vis-à-vis broad social groups further lowers the costs to ethnic or religious appeals especially in socially fragmented societies, which in turn increases the value of reputations built around favoring particular ethnic groups.²

As opposed to anocracies, autocracies have been suggested to be coherent political regimes and therefore, presumed to be strong regimes (Fearon and Laitin 2003, Hegre et al. 2001). Yet

² Prominent scholars discount the idea that social diversity or polarization are risks for the onset of civil war (Collier and Hoeffler 1998, 2004; Fearon and Laitin 2003). Others find that more diverse societies or more polarized societies are more likely to experience ethnic civil war (Sambanis 2001, Reynal-Querol 2002). Recent work also finds that social fractionalization (ethnic and religious) increases the chances of civil war in general (Collier et al. 2009), or that exclusion from government on ethnic criteria increases civil war risk (Wimmer et al. 2009).

we argue that a form of state weakness emanates from conflictual relationships between autocratic leaders and supporting insider elites, and that this weakness has important consequences for fighting an insurgency. Svolik (2009), for example, points out that the key dilemma of authoritarian regimes is one between the dictator wanting to increase its relative power position vis-à-vis the ruling coalition and members of the same ruling coalition threatening to stage a coup d'état. Relatedly, Keefer (2010) suggests that intra-elite bargains in many autocracies lack credibility, in that the leader retains the power to stop the flow of rents (or arrest / kill) to elite members and privileged elites may shirk in achieving leader causes, including potential counter-insurgency efforts .

Coup risk can have serious effects on the ability of regimes to deal with insurgency. Belkin and Schofer (2003) write that coup proofing strategies by vulnerable regimes can result in leaders undermining the quality of their own military forces: either by stacking the military with loyalists or one's ethnic group, by shuffling, arresting or even executing high ranking officers, or by creating multiple and overlapping units that are suspicious of each other and check on each other. Additionally, Keefer (2010) argues that leaders with low credibility vis-à-vis the military (e.g., no ethnic or religious ties) have a difficult time insuring loyalty and need to pay higher wages or short-term rewards to the military (also in Weinstein 2005.) Acemoglu et al. (2009) also directly suggest that elites may forgo investment in the military and risk losing monopoly over the use of force through civil war, because of high risk of coup d'état.

2.3. Natural resources and weak states – a conditional relationship

The presence of natural resource wealth is likely to compound the problems faced by weak states via several channels. First, leaders with low credibility vis-à-vis opposition groups, who exclude or marginalize such groups, will likely see a further increase in grievance due to larger relative

deprivation. That is, excluded populations in natural resource rich countries bear the costs of the worse institutional and distributional outcomes associated with the presence of such resource (Humphreys 2005, McNeish 2010, Le Billon 2003, Lujala et al. 2005) without necessarily enjoying the benefits, thus increasing the willingness to use violence to access those benefits. In addition, natural resources can also help collective action within outsider groups by providing a focal point for popular dissatisfaction. And, the presence of rents makes capturing the state or seceding more attractive for excluded social groups.

Second, the financing of rebellion is easier in countries that already have a hard time policing their whole territory due to political instability at the center or mixed strategies used by the center to govern. In such countries, the government has difficulty denying access to illicit exploitation of alluvial diamonds for example, or more generally to resources in regions where the rebels have the upper hand in providing security. The government will also find it difficult to preventing the extortion of owners of hard to relocate capital and resources, like oil (Ross 2004). And, as insurgency (especially a periphery rebellion) is generally not an immediate threat to the state, weak governments may rationally prefer to siphon resource rents away from the country or shore up support exclusively within their ruling coalition, rather than tax and police remote areas (Collier and Hoeffler 2005).

Finally, weakly credible states rich in natural resources may also be not able to commit to the terms of “sharing” this wealth with the groups that help protect the regime, increasing the weakness and instability of the regime. Leaders that lack credibility vis-à-vis privileged elites may have a hard time convincing other groups that they will not just pillage the wealth in short term or invest in mechanisms designed to keep various factions from revenue sharing into the future. Countering this problem, Bueno de Mesquita et al. (2003) point out that, very likely,

potential challengers have similar credibility issues when they attempt to recruit supporters from the elite circle and make promises about the future allocation of resources.

On the other hand, however, natural resources do bring in more cash to governments and the revenues can be used to strengthen weak governments. Smith (2004) and Morrison (2009), for example, show that oil exports and, respectively, oil rents increase political regime durability of both democracies and dictatorships rather than promote instability (see also Ulfelder 2007, Omgba 2009). Also, as Bueno de Mesquita et al. (2003) argue, leaders in small-coalition systems rely on private goods, rather than public goods, to reward their key supporters. The presence of natural resource rents, especially in important quantities, in countries governed by small elites can both provide resources for funding private goods and motivate leaders to keep those resources under the control of the state, by focusing the effort of the security apparatus. Further, Smith (2008), shows that free resources (like oil or diamonds) allow small coalition systems to (further) reduce the provision of public goods in response to revolutionary threats, increasing the coordination costs of revolutions and reducing economic growth.³ Free resources, however, help leaders maintain rent distribution to the inner elite circle despite the contraction of the economy.

More directly related to civil conflict, Basedau and Lay (2009) and Fjelde (2009) suggest that abundant resources may be used by the government to buy off opposition, increase the support of loyal factions and would be rebels or step up the financing of the security apparatus, all of which are argued to reduce the vulnerability of countries to the onset civil war. Specifically, Basedau and Lay (2009) find that oil wealth (when controlling for dependence on oil revenue) reduces the

³ Coordination costs of civil conflict can clearly be reduced by appeal to ethnic kin for example.

However, ethnicity can also be a useful tool to discriminate public good allocation, reducing such public goods for the populations most likely to rebel.

chances for civil war onset. Their work on a smaller sample of countries with high average dependence on oil revenues shows that, comparatively, the countries rich in oil vs. the poorer ones can maintain peace because they engage in more large scale distribution and spend more on the military.⁴ Fjelde (2010) finds that, when corruption is present, oil wealth (quantity and rents) increases the chances for peace. She interprets the findings to be a consequence of natural resources facilitating the provision of private goods to would be rebel factions or to the potential followers of entrepreneurs of political violence (see also LeBillon 2003). Close to our research, Morrison (2010) argues that only countries with a strong capacity are able to use oil revenue as rents or to generate preferences for regime stability from the owners of a fixed asset like oil. His work shows that oil contributes to civil war only in weak capacity states (low GDP/capita; low income tax to GDP ratio; anocracy; low penetration of telephone lines).

Our argument is that political weakness and the accompanying lack of credibility can have different characteristics, which in turn influence whether natural resource revenues mitigate or exacerbate such weakness. That is, we suggest that whereas regime incoherence and credibility issues vis-à-vis excluded or opposition groups cannot be escaped with the help of resource rents, lack of credibility vis-à-vis inner elite circles is more likely to be purchased with revenue from natural resource exploitation. We explain this conditional logic below.

First, in semi-democracies, the presence of natural resource endowments can actually aggravate the problem of the government. Rebel groups in such regimes can have heightened expectations about their probability of victory which does not necessarily match the calculus of

⁴ To note, their method for comparing country values to sample medians for 27 oil dependent countries (after 1990) to understand the differences in spending patterns for rich vs. poor oil producers overlooks important differences among countries.

the regime and make exaggerated demands (e.g. Regan and Henderson 2002). In such a situation, a peaceful bargaining solution may simply not exist and buying peace with the distribution of rents can be difficult. Further, a perceived high probability of winning a civil war against a weak, incoherent regime combined with a large prize for taking over a resource rich state can increase the appeal of civil war. Also, it is not clear to what extent mixed regimes are able or willing to use oil revenues to strengthen their military. As we suggested earlier, resource looting may be a more rational strategy or such regimes are simply too disorganized or unsure of what strategy to follow to be able to translate resources into policing. Even more, political instability disturbs the pre-existing networks of patronage and unstable regimes both have a difficulty identifying groups that would support them and credibly committing to sharing resources (Englebert and Ron 2004, Le Billon 2003).

Second, the presence of natural resource endowments can further encourage contentious group identity formation and, as such, increases the chances of conflict in countries where political leaders revert to ethnic, racial or religious lines of demarcation in order to establish credibility to govern. As discussed above, relative deprivation and viewing the resource rents as the prize for taking over the state are the likely mechanisms.

Finally, we have argued that political regimes can also be weakened by a real risk of losing power via a coup d'état from within the state's own apparatus. In the presence of resource wealth, this weakness of coup prone regimes is likely to turn into short time horizons, low quality policy, grievances and increased incentives to loot, but not necessarily into weak policing. For example, Collier and Hoeffler (2007) find that countries with high risk of coup d'état have larger military spending. Larger budgets clearly need not generate across the board more efficiency and loyalty and may be a result of leaders bribing the military and offering what

Keefer (2010: 6) calls “spot payments that fully cover the reservation wage of the fighters”. However, even though leaders would prefer to insure a kind of loyalty that need not be monitored, resource rents at least allow them to honor their obligations to the security apparatus and minimize the risk of the military “quitting, striking, or using their arms against citizens” (Keefer 2008: 38). Similarly, Acemoglu et al. (2010) argue that one strategy available to non-democratic elites is to repress using the security apparatus, while paying the military a so called “efficiency wage” afforded by resource wealth. Also, while the state may find it difficult to motivate its soldiers, the presence of exploitable natural resources poses a similar problem for the recruitment of the would-be rebel army, where opportunism is likely to drive the recruitment patterns (Weinstein 2005).

Equally important, it is very likely that regimes at risk of coup d'état understand well what kind of ruling coalition they need to assemble and how to spend their resources in order to survive (Svolik 2009, Quinlivan 1999, Bueno de Mesquita et al. 2003, Smith 2008). For example, Quinlivan (1999) analyzes how countries coup-proofing strategies and argues that Saudi Arabia, Iraq (since 1979) and Syria (since 1970) are countries at high risk of coup d'état but with highly successful coup-proofing strategies (consistent with Belkin and Schofer 2003). He also argues that in the case of Saudi Arabia and Iraq oil revenues were large enough that the regimes were able to impart rent not just to close allies but also, to “small, previously marginalized groups that can expand the regime's base without running the risk of the smaller groups coming to dominate.” Syria on the other hand could not afford the largesse of the other two oil rich countries and instead of direct payments was granting key supporters of the regime the ability to collect bribes (e.g. control over import licenses). So, as a direct effect, regimes suffering from a risk of coup d'état can be subject to a higher risk of civil war as well. Yet for

such regimes the availability of substantial resources is more likely to be channeled in ways that deter rebellion (the military and rents), plausibly countering the grievances generated by natural resources and rebels' viewing of such resources as a prize for taking over the state.

Following the theoretical discussion we derive two hypotheses:

H1: Presence of natural resources increases the risk of civil war for semi-democratic and unstable regimes and states where leaders appeal to ethnicity in order to govern.

H2: While coup risk increases the risk of rebellion, natural resource rents allow high coup d'état risk regimes to lower the risk of civil war.

3. Data and research design

We use two alternative definitions for civil war onset, based on widely used measures in the literature: Fearon and Laitin (2003) and the Prio/Uppsala data (Gleditsch et al. 2002) for years 1946-2003. The Fearon and Laitin definition captures the onset of large scale civil wars, coded using a threshold of 1000 battle deaths over the course of conflict with a yearly average of at least 100 deaths. This data is updated to 2003 using Fearon (2011). The Prio/Uppsala measure captures the onset of smaller scale conflict, earlier onsets for the large scale conflicts and flare-ups of violence in a dormant conflict. This definition uses a lower threshold of 25 battle deaths per year and we use the Lujala (2010) as a data source. The dependent variable is coded 1 for country years with a civil war onset and 0 in all other cases, and we do not eliminate the observations with an ongoing civil war.

We attempt to measure state weakness in ways that capture the theoretical account. To capture mixed regimes we use the same indicator variable for anocracy as Fearon and Laitin (2003) based on Polity IV scores. Anocracies have Polity IV scores between -5 and 5. Also similar to Fearon and Laitin (2003), institutional instability is coded 1 if a country has

experienced a change in Polity IV of three points or more in the previous three-year period. Additionally, to proxy instability we measure a country's history of rioting in the past 5 years (Banks 2010).⁵ We also use ethnic fractionalization (Fearon & Laitin 2003) and a direct measure of group exclusion from government based on ethnicity (Wimmer et al. 2009). While the ethnic fractionalization index does not vary over time, the Wimmer et al. (2009) measure of ethnic exclusion changes over time, reflecting the idea that leaders build their coalitions endogenously in response to changing circumstances.

To proxy the risk of coup we use the coup risk measure proposed by Belkin and Schofer (2003) which is a composite score based on the strength of civil society, legitimacy of the regime and the coup history of the country in the past ten years.⁶ This measure is the most appropriate at capturing coup risk distinctly from political instability and Belkin and Schofer argue plausibly that, by itself, the history of a country's successful and attempted coup d'état does not capture high risk regimes that manage to have effective coup-proofing strategies. Still, the Belkin and Schofer measure is only available from 1960 to 2000 and, therefore, we also proxy coup risk with the history of attempted and successful coup d'état in the past five years which has been shown to be a good indicator of future coups (Londregan and Poole 1990).⁷ Additionally we use

⁵ Riots are violent demonstrations or clashes of more than 100 citizens involving the use of physical force. We count the number of years with riots in the past five years and for the first five years in the series, we count the number of riots for the available years only.

⁶ The correlation of coup risk with anocracy is relatively low at 0.21.

⁷ To further minimize the loss of observations, for the first five years of a country for which we have a measure of coups we compute history of coup for the available years only rather than turn the observation to missing. We update the data to 2003 using Powell and Thyne (2011).

an indicator of whether a country is a military regime, which Belkin and Schofer also show to be a good predictor of coup d'état. While political instability and anocracy indicators have been used extensively in prior work, our use of the coup d'état risk and history, and the history of riots are novel operationalizations of state weakness (also used in Author 2007). By using the five years lagging structure for the history of coups and riots, and the ten year for the risk of coup, we mitigate concerns that our state weakness operationalizations are endogenous to civil war onset.

The literature uses a large number of measures for natural resource endowments, and we use all available data for oil and diamond production. Our theoretical account is better suited by the use of quantitative measures (rents or quantities produced), however several of these measures miss data before 1960 (Humphreys 2005, Ross 2008), some measures miss data on the production of major producers (Fearon and Laitin 2003, Humphreys 2005) and production volumes and rents themselves may be endogenous to the risk of civil war. On the other hand, dummy indicators for oil or diamond production have very good coverage, are less likely to be endogenous to conflict, yet they aggregate countries with different production profiles.

Consequently, we employ all of the most recent measures⁸ and seek to ascertain robustness across different specifications: Fearon and Laitin (2003) dichotomous indicator variable for oil exporters, equal to 1 for country-years in which fuel exports are greater than one-third of export revenues;⁹ Humphreys (2005) variable recording quantities of diamonds mined and variable

⁸ Collier and Hoeffler's measure for primary commodity exports / GDP is not used because it has been criticized extensively in the literature (Ross 2004, Lujala et al. 2005, Ross 2006) and Fearon (2005) shows that the results are driven mainly by oil exports.

⁹ We consider this indicator still a quantitative measure, because a value of 1 implies that relatively large quantities of oil are exported.

coding the level of production and the proven reserves of oil, in per capita terms; Ross (2008) variable recording oil (and gas) rents per capita (i.e. accounting for levels of production, country specific costs and prices); Lujala et al. (2005) dichotomous indicator variable for diamond production, as well as for the type of diamond resource – primary (kimberlite) vs. secondary (alluvial); Lujala (2010) dichotomous indicator variables for the production of oil from both onshore and offshore deposits.

For the empirical estimations we use a logit model with robust standard errors and we control for the temporal relation among observations by including the duration of peace and cubic splines (Beck et al. 1998). The control variables are based on Fearon and Laitin (2003) and include: the lagged income per capita, the log of the country's population, noncontiguous territory, the log of the estimated percentage of country's mountainous terrain, lagged democracy score and religious fractionalization.¹⁰ To test our conditional hypotheses, we use interaction terms between measures of resource endowment and measures of state weakness.

4. Results and discussion

Tables 1 and 2 show the results for the context variables for which we expect natural resource endowments to exacerbate the chances of civil war onset: anocracy, political instability, riot

¹⁰ Income per capita comes from Penn World Tables and World Development Indicators, supplemented with per capita energy consumption. Population size is based on World Bank World Development Indicators. We do not control for recent independence because for some of our specifications data is only available post 1960, and this variable may not have any variance. Democracy is based on lagged values of Polity IV (-10 to 10). For the models using anocracy as an indicator for weak states only a democracy indicator is also included (Polity IV greater than five). Data on control variables is updated to 2003 using Lujala (2010).

history, ethnic fractionalization and ethnic exclusion. For tractability, instead of the full models, the table only shows for each model the coefficients and the standard errors for the context variable, the natural resource variable and their interaction. Also, the results for the indicator variables for natural endowments are shown in the Supplementary Information. The stars on the coefficients are for the individual variable and exploring the joint effects is done with the help of the predicted probabilities (marginal effects) in Table 5. Given that the Fearon and Laitin (2003) specification has really become the workhorse model for the study of civil war onset, we believe there is little loss of information from not showing the full models.

[Table 1 about here]

While the findings are not statistically significant across all models, they do offer a good amount of support for our claims. Broadly, we find that oil abundance (more likely than diamond riches) compounds the problems faced by incoherent regimes, countries with a history of riots as well as ethnically diverse societies and countries discriminating groups based on ethnicity

For anocracies, two measures of oil abundance (Humphreys' oil production and Ross' oil rents) increase the risk that these regimes will see onset of both large and small civil war, while Fearon and Laitin's measure of oil dependence does not have a conditional effect. At the same time, the direct effect of oil dependence and abundance on conflict is generally positive and statistically significant (Humphreys oil production and Ross rents for large wars not significant for large wars), while diamond production, if anything, reduces the risk of war (statistically insignificant).¹¹

¹¹ Indicator dummy variables for resource endowments are generally insignificant, with the exception of secondary diamonds which increase the risk of civil war. Primary diamond production increases the risk of civil war only in anocracies.

The results also show that politically unstable regimes are at increased risk of (large) civil war onset if the country produces large quantities of oil (Humphreys 1995). On its own, political instability also increases the risk of large war onset. At the same time, small scale war onset appears unaffected by instability coupled with resource rents, or by instability on its own.¹²

The findings are strong when we proxy state weakness with the history of rioting: Higher levels of oil production and oil reserves (Humphreys), as well as oil and gas rents (Ross) in countries that have a history of riots increase the likelihood of war onset, for both large wars and smaller conflicts. Additionally, all three measures of resource abundance - oil production, reserves and rents – appear to reduce the risk of large civil war onset, except in countries with a history of riots.¹³ On its own, a history of rioting increases the risk of seeing civil war onsets, especially large war, but this result is not consistently statistically significant.¹⁴

Our estimations in Table 2 further indicate that oil production and reserves (Humphreys 2005) increase the risk of large civil war onset in societies that are fractionalized along ethnic

¹² Using the dummy indicators for natural resource production produces generally insignificant results. Still, we find that secondary diamond production reduces likelihood of small civil war, except for unstable regimes. See the Supplementary Information.

¹³ Fearon and Laitin (2003) measure of natural resource dependence (oil export revenue as percentage of export revenue) does not have a conditional effect. High reliance on oil exports directly increases the risk of civil war onset, irrespective of riot history.

¹⁴ The indicator variables for resource production produce insignificant results, except that primary diamond production may reduce the risk of small civil war onset.

lines.¹⁵ Large civil war onset is also more likely in countries that produce larger quantities of oil (Humphreys 2005) and, at the same time, exclude (based on ethnicity) a large proportion of their population from decision making. Moreover, such discriminatory regimes face an increased risk of smaller scale civil war when the country has large proven reserves of oil and gas.¹⁶

[Table 2 about here]

Table 3 shows the results for the state weakness variables for which we expect that natural resource endowments mitigate the chances of civil war: the risk of coup d'état, coup d'état history and military regimes. Most of the interaction terms coefficients are negative, as predicted, but not all reach conventional levels of statistical significance. We find larger quantities of diamonds mined (Humphreys 2005) reduce the likelihood of war for regimes facing a high *risk coup d'état* (in particular for large wars).¹⁷ At the same time, on its own, coup risk increases the likelihood of war, whereas diamond production does not achieve statistical significance. The models employing the *history of coup d'état*¹⁸ do not find a statistically significant conditional relationship for diamond production. Diamond and its interaction with *military regime* is also not statistically significant, even though, on its own, military regime increases the chance of a civil war onset.

¹⁵ The results do not hold for small scale wars (not statistically significant) and, in fact, the effect for countries dependent on oil exports (Fearon and Laitin) is in the opposite direction.

¹⁶ We note the opposite effect for small civil wars for the dichotomous variable indicating secondary diamond production in the presence of discrimination on ethnic criteria.

¹⁷ This result also holds for primary and secondary diamond production (Lujala et al. 2005).

¹⁸ The correlation between risk of coup and coup history is 0.45. The correlation between risk of coup and military regime is 0.37.

[Table 3 about here]

While the direct effect of oil production is to increase the likelihood of civil war, oil also reduces the chance of war onset for countries with a high *risk of coup d'état*. The interaction reach conventional levels of statistical significance for the Humphreys oil production and the Ross oil and gas rents measures for small scale wars. The results are similar for the larger sample for which we have available the *history of coup d'état*, but, in this sample, only the Fearon and Laitin oil exports significantly reduce the risk of civil war for coup threatened regimes for both small and large war onset. *Military regimes* are also helped by oil resources to reduce the risk for civil war, with statistically significant interaction terms in the models for small war onset for Humphreys oil production and Fearon and Laitin oil export indicator.¹⁹

The results for both diamond and oil endowments provide support for the ideas behind the rentier state hypotheses, in that coup vulnerable regimes appear able to use revenues from diamond and oil production to deter civil war onset. Closely related to our hypothesis and our results, Collier and Hoeffler (2007) find that high risk of coup d'état results in increased military expenditures. Their findings apply particularly to Africa where coup d'état risk has remained elevated and where the higher spending on the military reduces significantly the risk of coup d'état. Our own findings further suggest that countries with rich mineral endowments that are at risk of coup d'état can use increased spending on the military not just to reduce the risk of coup but also reduce the risk of rebellion. A cautionary point in this account is that, on their own, a high risk of coup d'état, a history of coups or a military regime generally pose a higher risk of civil war, and the coefficients for these variables are usually statistically significant.

¹⁹ This result also holds for the Lujala (2010) off-shore oil production indicator.

Because the paper uses at a large number of measures of the war definition, natural resources and structural conditions, the research design searches for robust results. Table 4 summarizes the direction and statistical significance of the coefficients on the interacted variables, showing both a good amount of support for our hypotheses and that it is very unlikely that the totality of our results would be due to pure chance. In addition, we have explored a shorter and longer time window (than 5 or 10 years) for the history of coup d'état and riots and our results remain robust. While we have taken as given the other independent variables and the model specification, Fearon and Laitin (2003) and the subsequent literature have shown that their results are robust to a substantial number of checks, including a different lagging structure, different definitions for the independent variables, adding other variables, and different modeling choices. Therefore, finding consistency in our results represents strong support for the theoretical hypotheses.

[Table 4 about here]

The magnitude of the effect of key variables is not immediately apparent from the individual coefficients. Table 5 shows the marginal effects of state weakness (anocracy, riot history, coup risk or military regime), when varying oil production and rents while keeping all the other variables at observational mean. We compute the results by varying the Humphreys (2005) oil production and the Ross (2008) oil and gas rents for the models with a statistically significant interaction term, for the Prio \ Uppsala definition of civil war.

[Table 5 about here]

The midpoint predicted probabilities offer a stark picture that is worth discussing because of the relative magnitude of the effects. For example, at medium levels of coup d'état risk increasing the Humphreys oil production from the 75th to the 99th percentile leads to a five times higher likelihood of civil war. Because of the negative interaction term, at high levels of coup

risk, the same likelihood of civil war, while still going up, is increasing by a mere to 35%.

Similarly, at medium levels of coup d'état risk, increasing Ross oil rents from the 75th to the 99th percentile increases the likelihood of civil war four times. At high levels of coup risk, however, being very rich in oil rents actually reduces the same likelihood of civil war by close to 40%.

On the other hand, when varying the Humphreys oil production from the 75th percentile to the 99th percentile, anocracies are about twenty times more likely to see civil, whereas for all other regimes (democracies and dictatorships) the risk of war is less than four times larger. The marginal effects are similar when varying the Ross oil rents. In the case of riot history, countries with no riot history, if anything, see a reduction of civil war risk when we vary oil production or rents. When a country has had three or five years with riots in the recent past, however, increasing oil production or rents dramatically increases the risk of civil war.

The other insight from inspecting at the size of the mid-point predictions is that while the predicted values for the risk of civil war when varying the mitigating circumstances are relatively low, the same predicted values when varying the aggravating circumstances are very high. This indicates that once a coup prone regime rich in natural resource rents starts to experience protracted street protests or other forms of instability, it is very likely that the mitigating effect of rent distribution and spending on the military will be overcome by the aggravating perception that the regime is weakening.

In many countries adverse and potentially mitigating context conditions have co-existed with natural resource endowments. For example, two conflict countries – Nigeria and Sudan – have been ruled intermittently by authoritarian/military regimes with a history of coup d'état. These countries, however also experienced bouts of political instability with transitions to democracy and numerous riots. In terms of resource endowments, in Nigeria oil was discovered and

produced already at independence in 1960, and the country became dependent on oil exports in the late 1960s. Nigeria has also had a relatively large production of oil, without being very rich in oil in per capita terms: In 1966, the year before the onset of civil war, Nigeria was around the top 15th percentile of countries in terms of oil and gas rents per capita, falling to around the top 20th percentile in 1999 (Ross 2008). Sudan on the other hand, discovered oil in 1979, with production being delayed until 1992. The country has not been as dependent on oil and has had a low level of production and rents (Ross 2008). The theoretical approach and empirical models in this study suggest that both countries were not producing enough oil per capita to allow oil revenue to buy civil peace via rent distribution through networks of coalitions that coup prone regimes develop or via military spending. Moreover, even as oil production is ramped up, the presence of political instability and rioting increases the risk of civil rebellion, very likely overpowering any mitigating effect from access to established coalition networks or the military.

5. Conclusion

This paper investigates whether state weakness has a conditional effect on the probability of civil war onset depending the presence of natural resource endowments. We view state weakness as emanating from the lack of credibility of political leaders vis-à-vis both the opposition and insider elites. The key novel argument is that regimes that are mainly weak because of coup risk posed by inner elites can mitigate the risk of rebellion by using natural resource rents to strengthen the military and distribute patronage. On the other hand, we suggest that regime incoherence or instability and credibility issues vis-à-vis excluded or opposition groups cannot be escaped with the help of resource rents. In this latter case, it is likely that the dominant effect of natural resources is to increase grievance and galvanize collective action, provide rebel financing, and increase the prize for taking over the state.

The evidence shows that endowments of oil and diamonds are associated with increased conflict when they are paired with a particular type of weak state: anocracies, states with a history of riots or high risk of political instability and countries a high degree of ethnic fractionalization and a policy of ethnic discrimination. In such countries, the discovery of oil and diamonds may result in conflict, including civil wars and low-level conflict. In contrast, in countries with high risk of coup d'état, diamond and oil production appear to reduce the onset of war possibly due to high military spending and the use of established support networks for the regimes, thus backing the rentier state hypothesis (Basedau and Lay 2009). To note, coup risk or a history of prior coup d'état by themselves tend to increase the likelihood of civil war onset, but natural resource rents tend to reduce this likelihood, in particular for countries enjoying very large rents.

Coup d'état is a non trivial threat to the survival of leaders and a source of state weakness. Very relevant, Bueno de Mesquita and Smith (2010) show that small coalition leaders are more likely to survive in office when they can use repression to govern. They also show that the use of repression is more likely when leaders have at their disposal free resources (oil/aid) that are not affected by the domestic economic contraction likely to accompany such repression and can be used to maintain the loyalty of elite supporters. Our paper adds to this body of literature by bringing evidence that the chance of civil war is indeed lower for regimes at risk of coup d'état with access to income from natural resources.

6. References

- Acemoglu, Daron, Davide Ticchi, and Andrea Vindigni. "Persistence of Civil War." NBER Working Paper No. 15378. 2009.
- . "A Theory of Military Dictatorship." *American Economic Journal: Macroeconomics* 2, no. 1 (2010): 1-42.
- Banks, Arthur S. "Cross-National Time-Series Data Archive." Databanks International. Jerusalem, Israel. see <http://www.databanksinternational.com>, 2010.
- Basedau, Matthias, and Jann Lay. "Resource Curse or Rentier Peace? The Ambiguous Effects of Oil Wealth and Oil Dependence on Violent Conflict." *Journal of Peace Research* 46, no. 6 (2009): 757-76.
- Beck, Nathaniel, Katz, Jonathan N., and Richard Tucker. "Taking Time Seriously in Binary Time-Series Cross-Section Analysis." *American Journal of Political Science* 42, no. 4 (1998): 1260-1288.
- Belkin, Aaron, and Evan Schofer. "Toward a Structural Understanding of Coup Risk." *Journal of Conflict Resolution* 47, no. 5 (2003): 594-620.
- Bueno de Mesquita, Bruce, Alastair Smith, Randolph M. Siverson, and James D. Morrow. *The Logic of Political Survival*. Cambridge: MIT Press. 2003.
- Bueno de Mesquita, Bruce and Alastair Smith. "Leader Survival, Revolutions and the Nature of Government Finance" *American Journal of Political Science* 54, no. 4 (2010): 936-50.
- . "On Economic Causes of Civil War." *Oxford Economic Papers* 50 (1998): 563-73.
- . "Resource Rents, Governance, and Conflict." *The Journal of Conflict Resolution* 49, no. 4 (2005): 625-33.
- . "Military Spending and the Risks of Coups d'Etat?" WP Oxford University (2007).

- Collier, Paul, Anke Hoeffler, and Dominic Rohner. "Beyond Greed and Grievance: Feasibility and Civil War." *Oxford Economic Papers* 61, no. 1 (2009): 1-27.
- Englebert, Pierre, and James Ron. "Primary Commodities and War: Congo-Brazzaville's Ambivalent Resource Curse." *Comparative Politics* 37, no. 1 (2004): 61-81.
- Fearon, James D. "Primary Commodity Exports and Civil War." *Journal of Conflict Resolution* 49, no. 1 (2005): 483-507.
- . "Governance and Civil War Onset." *World Development Report* 2011.
- Fearon, James D. and David D. Laitin. "Explaining Interethnic Cooperation." *American Political Science Review* 90, no. 4 (1996): 715-35.
- . "Ethnicity, Insurgency, and Civil War." *The American Political Science Review* 97, no. 1 (2003): 75-90.
- Fjelde, Hanne. "Buying Peace? Oil Wealth, Corruption and Civil War, 1985-99." *Journal of Peace Research* 46, no. 2 (2009): 199-218.
- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margereta Sollenberg, and Havard Strand. "Armed Conflict 1946-2001: A New Dataset." *Journal of Peace Research* 39, no. 5 (2002): 615-37.
- Humphreys, Macartan. "Natural Resources, Conflict, and Conflict Resolution." *Journal of Conflict Resolution* 49, no. 4 (2005): 508-37.
- Keefer, Philip. "Insurgency and Credible Commitment in Autocracies and Democracies." *The World Bank Economic Review* 22, no. 1 (2008): 33-61.
- Keefer, Philip. "Why follow the leader? Collective action, credible commitment and conflict." Prepared for the *Oxford Handbook of the Economics of Peace and Conflict*. Michelle Garfinkel and Stergios Skaperdas, editors, 2010.

- Le Billon, Phillipe. "Buying Peace or Fueling War: The Role of Corruption in Armed Conflicts." *Journal of International Development* 15, no. 4 (2003): 413-26.
- Lujala, Päivi. "The Spoils of Nature: Armed Civil Conflict and Rebel Access to Natural Resources." *Journal of Peace Research* 47, no. 1 (2010): 15-28.
- Lujala, Päivi, Nils Petter Gleditsch, and Elisabeth Gilmore. "A Diamond Curse? Civil War and a Lootable Resource." *The Journal of Conflict Resolution* 49, no. 4 (2005): 538-62.
- McNeish, John-Andrew. "Rethinking Resource Conflict." In *World Development Report*, 2011.
- Morrison, Kevin M. "Oil, Non-tax Revenue, and the Redistributive Foundations and Regime Stability." *International Organization* (2009) 63: 107-138.
- Morrison, Kevin M. "Oil, Conflict, and Stability." Working Paper, Cornell University, 2010.
- Muller, Edward N., and Erich Weede. 1990. Cross-national variations in political violence: A rational action approach. *Journal of Conflict Resolution* 34:624-51.
- Ongba, Luc Désiré. "On the Duration of Political Power in Africa: the Role of Oil Rents" *Comparative Political Studies* 42, no. 3 (2009): 416-436.
- Powell, Jonathan M., and Clayton L. Thyne. "Global Instances of Coups from 1950-2010: A New Dataset." *Journal of Peace Research* 48 (2011): 249-259.
- Quinlivan, James, T. " Coup-Proofing: Its Practice and Consequences in the Middle East". *International Security*, 24 (1999): 131-165.
- Regan, Patrick M., and Errol A. Henderson. Democracy, threats and political repression in developing countries: are democracies internally less violent? *Third World Quarterly* 23 (2002): 119-36.
- Reynal-Querol, Marta. "Ethnicity, Political Systems, and Civil Wars." *Journal of Conflict Resolution* 46, no. 1 (2002): 29-54.

- Ross, Michael. "A Closer Look at Oil, Diamonds, and Civil War." *Annual Review of Political Science* 9 (2006): 265-300.
- . "Oil, Islam, and Women." *American Political Science Review* 102, no. 1 (2008).
- . "What Do We Know About Natural Resources and Civil War?" *Journal of Peace Research* 41, no. 3 (2004): 337-56.
- . *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations*. Princeton University Press, forthcoming 2012.
- Sambanis, Nicholas. "Do Ethnic and Nonethnic Civil Wars Have the Same Causes?" *Journal of Conflict Resolution* 45, no. 3 (2001): 259-82.
- Smith, Alastair. "The Perils of Unearned Income." *Journal of Politics* 70, no. 3 (2008): 780-93.
- Smith, Benjamin. "Oil Wealth and Regime Survival in the Developing World, 1960–1999." *American Journal of Political Science* 48, no. 2 (2004): 232-46.
- Ulfelder, Jay. "Natural-Resource Wealth and the Survival of Autocracy." *Comparative Political Studies* 40, no. 8 (2007): 995-1018.
- Weinstein, Jeremy, M. "Resources and the Information Problem in Rebel Recruitment." *Journal of Conflict Resolution*, 49, no. 4 (2005): 598-624.
- Wimmer, Andreas, Lars-Erik Cederman, and Brian Min. "Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set." *American Sociological Review* 74, no. 2 (2009): 316-37.

Tables

Table 1. Determinants of civil war risk: 1946-2003

Natural resource endowments *aggravating* the problem of weak states

Context variable	Natural resources Context variable Interaction	Fearon and Laitin (2003) civil war	Prio \ Uppsala civil war
Anocracy	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6912)	0.622* (0.349)	0.549** (0.238)
Model 1	Anocracy	0.519** (0.253)	0.474* (0.186)
	Interaction	-0.091 (0.489)	0.011 (0.348)
	Humphreys oil production (observations 5139)	0.411 (1.073)	1.509*** (0.425)
Model 2	Anocracy	0.555** (0.271)	0.537*** (0.188)
	Interaction	7.872** (3.664)	5.118** (2.515)
	Humphreys oil reserves (observations 5171)	0.001*** (0.062)	0.048*** (0.016)
Model 3	Anocracy	0.635** (0.264)	0.544*** (0.187)
	Interaction	-0.350 (0.830)	0.417 (0.321)
	Humphreys diamond production (observations 5139)	-0.383 (0.688)	-0.424 (0.492)
Model 4	Anocracy	0.567** (0.269)	0.546*** (0.187)
	Interaction	1.531 (1.129)	0.531 (1.205)
	Ross oil rents per capita (observations 5634)	0.00007 (0.00010)	0.0001*** (0.00004)
Model 5	Anocracy	0.535** (0.265)	0.490*** (0.186)
	Interaction	0.0007 (0.0008)	0.0012** (0.005)
Political instability	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6912)	0.731** (0.289)	0.699*** (0.201)
Model 6	Instability	0.511** (0.248)	0.260 (0.196)
	Interaction	-0.124 (0.537)	-0.229 (0.410)
	Humphreys oil production (observations 5139)	0.779 (0.855)	1.605*** (0.391)
Model 7	Instability	0.599** (0.248)	0.290 (0.197)
	Interaction	7.120** (3.141)	3.118 (2.970)
	Humphreys oil reserves (observations 5171)	-0.011 (0.087)	0.050*** (0.015)
Model 8	Instability	0.591** (0.250)	0.334* (0.196)
	Interaction	0.780 (0.745)	-0.509 (0.681)
	Humphreys diamond production (observations 5139)	-0.281 (0.448)	-0.860 (0.860)
Model 9	Instability	0.639** (0.249)	0.285 (0.197)
	Interaction	0.438 (0.536)	0.999 (0.920)
	Ross oil rents per capita (observations 5634)	0.00009 (0.00008)	0.00012*** (0.00004)
Model 10	Instability	0.501** (0.250)	0.247 (0.194)
	Interaction	0.00038 (0.00069)	0.00013 (0.00048)
Number of years with riots in the past 5 years	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6442)	0.750** (0.360)	0.688*** (0.253)
Model 11	Riots	0.236*** (0.087)	0.180*** (0.064)
	Interaction	-0.099 (0.178)	-0.105 (0.145)
	Humphreys oil production (observations 4893)	-4.281* (2.408)	-0.222 (1.311)
Model 12	Riots	0.100 (0.098)	0.081 (0.070)
	Interaction	4.820*** (1.324)	2.986*** (0.948)
	Humphreys oil reserves (observations 4893)	-0.118 (0.090)	0.037 (0.028)
Model 13	Riots	0.121 (0.100)	0.093 (0.069)
	Interaction	0.170** (0.077)	0.148*** (0.048)
	Humphreys diamond production (observations 4893)	-0.096 (0.158)	-0.987 (0.962)
Model 14	Riots	0.139 (0.101)	0.108 (0.071)
	Interaction	-0.076 (0.246)	0.325 (0.344)
	Ross oil rents per capita (observations 5365)	-0.00068* (0.00038)	-0.00014 (0.00015)
Model 15	Riots	0.126 (0.095)	0.107 (0.066)
	Interaction	0.00069*** (0.00021)	0.00032** (0.00015)

Note: Results are from logit models where the dependent variable is 1 for years with war onset and zero otherwise. Table shows coefficients and standard errors in parentheses. Stars reflect levels of statistical significance: *** for 1%; ** for 5% and * for 10%.

Table 2. Determinants of civil war risk: 1946-2003

Natural resource endowments *aggravating* the problem of weak states

Context variable	Natural resources Context variable Interaction	Fearon and Laitin (2003) civil war	Prio \ Uppsala civil war
Ethnic fractionalization	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6912)	0.465 (0.512)	1.261*** (0.337)
Model 16	Ethnic fractionalization	0.306 (0.387)	1.196*** (0.292)
	Interaction	0.411 (0.810)	-1.145** (0.567)
	Humphreys oil production (observations 5139)	-4.668** (2.324)	1.175 (1.509)
Model 17	Ethnic fractionalization	0.353 (0.403)	0.886*** (0.303)
	Interaction	21.041*** (6.677)	2.333 (6.874)
	Humphreys oil reserves (observations 5171)	-1.024 (0.691)	-0.081 (0.174)
Model 18	Ethnic fractionalization	0.374 (0.395)	0.869*** (0.310)
	Interaction	2.698** (1.344)	0.741 (0.943)
	Humphreys diamond production (observations 5139)	-2.518 (3.372)	-2.576 (3.580)
Model 19	Ethnic fractionalization	0.488 (0.417)	0.923*** (0.297)
	Interaction	3.448 (4.688)	2.962 (4.648)
	Ross oil rents per capita (observations 5634)	-0.00154 (0.00173)	0.00015* (0.00008)
Model 20	Ethnic fractionalization	0.480 (0.395)	1.095*** (0.299)
	Interaction	0.00305 (0.00266)	-0.00016 (0.00041)
Excluded population	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6589)	0.767** (0.352)	0.738*** (0.272)
Model 21	Excluded Population	0.913** (0.423)	0.863*** (0.300)
	Interaction	-0.322 (0.993)	-0.439 (0.772)
	Humphreys oil production (observations 4872)	0.731 (0.684)	0.996 (0.646)
Model 22	Excluded Population	0.722 (0.448)	0.659** (0.317)
	Interaction	11.114* (6.232)	7.338 (4.696)
	Humphreys oil reserves (observations 4897)	0.014 (0.073)	-0.056 (0.042)
Model 23	Excluded Population	0.842** (0.426)	0.612* (0.316)
	Interaction	-0.005 (0.345)	0.721*** (0.262)
	Humphreys diamond production (observations 4872)	-0.451 (0.476)	-0.258 (0.279)
Model 24	Excluded Population	0.797* (0.461)	0.822** (0.329)
	Interaction	0.701 (1.608)	-0.858 (1.514)
	Ross oil rents per capita (observations 5322)	0.00013** (0.00005)	0.00007 (0.00005)
Model 25	Excluded Population	1.060** (0.418)	0.862*** (0.306)
	Interaction	-0.00027 (0.00042)	0.00040* (0.00023)

Note: Results are from logit models where the dependent variable is 1 for years with war onset and zero otherwise. Table shows coefficients and standard errors in parentheses. Stars reflect levels of statistical significance: *** for 1%; ** for 5% and * for 10%.

Table 3. Determinants of civil war risk: 1946-2003
Natural resource endowments *mitigating* the problem of weak states

Context variable	Natural resources Context variable Interaction	Fearon and Laitin (2003) civil war	Prio \ Uppsala civil war
Risk of coup d'état	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 5135)	0.937*** (0.329)	0.776*** (0.231)
Model 26	Risk of coup d'état	0.210** (0.100)	0.244*** (0.066)
	Interaction	-0.170 (0.195)	-0.173 (0.120)
	Humphreys oil production (observations 4917)	1.997* (1.210)	1.899*** (0.696)
Model 27	Risk of coup d'état	0.203** (0.095)	0.209*** (0.062)
	Interaction	-0.537 (0.532)	-0.539** (0.233)
	Humphreys diamond production (observations 4917)	-0.116 (0.237)	-0.396 (0.458)
Model 28	Risk of coup d'état	0.207** (0.094)	0.217*** (0.061)
	Interaction	-0.388*** (0.116)	-0.113 (0.157)
	Ross oil rents per capita (observations 4988)	0.00015** (0.00007)	0.00014*** (0.00005)
Model 29	Risk of coup d'état	0.200** (0.096)	0.202*** (0.065)
	Interaction	-0.00008 (0.00007)	-0.00005 ** (0.00002)
Coup d'état history in past 5 years	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6767)	0.866*** (0.277)	0.879*** (0.206)
Model 30	Coup history	0.528* (0.269)	0.636*** (0.194)
	Interaction	-0.987* (0.612)	-0.964** (0.441)
	Humphreys oil production (observations 5061)	1.660** (0.818)	1.566*** (0.507)
Model 31	Coup history	0.131 (0.283)	0.303 (0.200)
	Interaction	-1.542 (1.751)	-0.110 (0.811)
	Humphreys diamond production (observations 5061)	-0.066 (0.107)	-0.243 (0.269)
Model 32	Coup history	0.172 (0.282)	0.316 (0.201)
	Interaction	-3.541 (3.972)	-0.204 (0.831)
	Ross oil rents per capita (observations 5527)	0.00012** (0.00005)	0.00013*** (0.00004)
Model 33	Coup history	0.276 (0.280)	0.381* (0.196)
	Interaction	-0.00075 (0.00135)	-0.00006 (0.00007)
Military regime	Quantitative measures of resources endowments		
	Fearon and Laitin oil export dummy (observations 6850)	0.755*** (0.280)	0.880*** (0.203)
Model 34	Military regime	0.516* (0.291)	0.932*** (0.199)
	Interaction	-0.330 (0.571)	-0.948** (0.413)
	Humphreys oil production (observations 5123)	1.935* (0.999)	1.903*** (0.472)
Model 35	Military regime	0.518* (0.282)	0.728*** (0.196)
	Interaction	-1.494 (1.365)	-1.264* (0.781)
	Humphreys diamond production (observations 5123)	-0.079 (0.111)	-0.354 (0.410)
Model 36	Military regime	0.550* (0.287)	0.696*** (0.196)
	Interaction	-3.545 (4.225)	0.405 (0.653)
	Ross oil rents per capita (observations 5611)	0.00012** (0.00005)	0.00013*** (0.00004)
Model 37	Military regime	0.589** (0.282)	0.728*** (0.197)
	Interaction	-0.00120 (0.00148)	-0.00008 (0.00018)

Note: Results are from logit models where the dependent variable is 1 for years with war onset and zero otherwise. Table shows coefficients and standard errors in parentheses. Stars reflect levels of statistical significance: *** for 1%; ** for 5% and * for 10%.

Table 4: Robustness of interaction terms: Natural resource endowment variable * Weakness of the state
Summary of regression results in Tables 1, 2, 3, SI.1, SI.2, SI.3

Table 4.1 Natural resource endowments *aggravating* the risk of civil conflict

		Fearon and Laitin (2003) civil war		Prio \ Uppsala civil war	
		Models with an interaction coefficient sign in the expected direction / out of total	Models with a statistically significant interaction term / out of total	Models with an interaction coefficient sign in the expected direction / out of total	Models with a statistically significant interaction term / out of total
Oil endowment measures (7)	Governance & riot history	12 out of 18 models	5 out of 18 models	13 out of 18 models	6 out of 18 models
	Social structure	10 out of 12 models	4 out of 12 models	6 out of 12 models	4 out of 12 models
Diamond endowment measures (3)	Governance & riot history	8 out of 9 models	1 out of 9 models	8 out of 9 models	1 out of 9 models
	Social structure	6 out of 6 models	0 out of 6 models	2 out of 6 models	0 out of 6 models
Quantities / values of natural resource endowments (5)	Governance & riot history	10 out of 15 models	8 out of 15 models	12 out of 15 models	5 out of 15 models
	Social structure	7 out of 10 models	3 out of 10 models	7 out of 10 models	2 out of 10 models

Note: The models in Table 1.1 include the following variables for weakness of the state: governance indicators - anocracy, political instability, and riot history; and social structure indicators - ethnic fractionalization and the size of the excluded groups. As detailed in the text of the paper there are six measures for oil endowments based on Fearon and Laitin (2003), Humphreys (2005 – production and reserves), Lujala (2010 on-shore and off shore oil) and Ross (2009); three measures for diamond endowments are based on Lujala et al. (2005 – primary and secondary diamonds) and Humphreys (2005); the quantities / values of natural resource endowments include the measures from Fearon and Laitin (2003), Humphreys (2005) and Ross (2009). Humphreys (2005) oil reserves per capita are included in the estimated models.

Table 4.2 Natural resource endowments *mitigating* the risk of civil conflict

	Fearon and Laitin (2003) civil war		Prio \ Uppsala civil war	
	Models with an interaction coefficient sign in the expected direction / out of total	Models with a statistically significant interaction term / out of total	Models with an interaction coefficient sign in the expected direction / out of total	Models with a statistically significant interaction term / out of total
Oil endowment measures (6)	13 out of 15 models	1 out of 15 models	12 out of 15 models	6 out of 15 models
Diamond endowment measures (3)	7 out of 9 models	4 out of 9 models	7 out of 9 models	1 out of 9 models
Quantities / values of natural resource endowments (4)	12 out of 12 models	1 out of 12 models	11 out of 12 models	4 out of 12 models

Note: The models in Table 1.2 include the following variables for weakness of the state: coup d'état risk, history of coups and military regimes. The oil measures do not include the Humphreys (2005) oil reserves per capita, as it make little sense to test hypotheses based on rent distribution using measures of reserves.

Table 5: Predicted probabilities of civil war: Prio \ Uppsala civil war
Predicted probabilities for civil war – aggravating circumstances

		Anocracy=0	Anocracy=1	Riot in past 5 years=0	Riot in past 5 years=3	Riot in past 5 years=5
Humphreys (2005) oil production per capita	No oil	0.029	0.047	0.029	0.037	0.042
	75 th percentile	0.029	0.049	0.029	0.038	0.045
	95 th percentile	0.036	0.120	0.028	0.125	0.281
	99 th percentile	0.113	0.947	0.023	0.987	0.999
Ross (2009) oil and gas rents per capita	No oil	0.027	0.043	0.027	0.037	0.045
	75 th percentile	0.027	0.045	0.027	0.038	0.048
	95 th percentile	0.034	0.300	0.022	0.144	0.369
	99 th percentile	0.114	0.999	0.005	0.997	0.999

Predicted probabilities of civil war – mitigating circumstances

		Low risk of coup d'état	Medium risk of coup d'état	High risk of coup d'état	Military regime=1	Military regime=0
Humphreys (2005) oil production per capita	No oil	0.015	0.030	0.051	0.056	0.029
	75 th percentile	0.015	0.031	0.051	0.056	0.029
	95 th percentile	0.026	0.040	0.054	0.062	0.038
	99 th percentile ⁱ	0.347	0.148	0.069	0.099	0.155
Ross (2009) oil and gas rents per capita	No oil	0.015	0.031	0.051		
	75 th percentile	0.015	0.031	0.051		
	95 th percentile	0.026	0.038	0.050		
	99 th percentile ⁱⁱ	0.411	0.128	0.043		

Note: Predicted probabilities are estimated using models in Tables 1 and 3, for Prio \ Uppsala civil war. All remaining right hand side variables are kept at observational mean.

ⁱ Countries in the 99th percentile include: Saudi Arabia, Kuwait, Libya, United Arab Emirates.

ⁱⁱ Countries in the 99th percentile include: Saudi Arabia, Kuwait, Libya, United Arab Emirates, Qatar, Brunei. An increased risk of coup d'état reduces the predicted probability at oil rent levels in between the 99th and the 95th percentile, for additional countries like: Bahrain, Equatorial-Guinea, Gabon, Iraq, Norway, Oman, Trinidad and Tobago, and Venezuela.

Supplementary information

Table SI.1. Determinants of civil war risk: 1946-2003

Natural resource endowments *aggravating* the problem of weak states – indicator variables

Context variable	Natural resources Context variable Interaction	Fearon and Laitin (2003) civil war	Prio \ Uppsala civil war
Anocracy	Indicator variables of production		
	Lujala primary diamond production (observations 6920)	-0.749 (0.460)	-0.493 (0.293)
	Anocracy	0.346 (0.245)	0.405** (0.170)
	Interaction	1.596* (0.621)	0.753* (0.453)
	Lujala secondary diamond production (observations 6920)	0.098 (0.299)	0.374* (0.215)
	Anocracy	0.419 (0.262)	0.485** (0.192)
	Interaction	0.392 (0.457)	0.041 (0.322)
	Lujala oil production dummy - offshore (observations 6920)	-0.090 (0.392)	-0.118 (0.244)
	Anocracy	0.456* (0.254)	0.346* (0.185)
	Interaction	0.299 (0.539)	0.635* (0.356)
	Lujala oil production dummy - onshore (observations 6920)	0.006 (0.271)	0.162 (0.196)
	Anocracy	0.474 (0.303)	0.362 (0.233)
	Interaction	0.068 (0.401)	0.227 (0.290)
Political instability	Indicator variables of production		
	Lujala primary diamond production (observations 6920)	-0.308 (0.382)	-0.398 (0.267)
	Instability	0.410* (0.236)	0.146 (0.184)
	Interaction	0.888 (0.700)	0.763 (0.534)
	Lujala secondary diamond production (observations 6920)	0.141 (0.270)	0.389** (0.196)
	Instability	0.424 (0.263)	0.283 (0.203)
	Interaction	0.373 (0.495)	-0.084 (0.373)
	Lujala oil production dummy - offshore (observations 6920)	-0.222 (0.374)	0.069 (0.220)
	Instability	0.339 (0.252)	0.163 (0.195)
	Interaction	0.878 (0.550)	0.348 (0.406)
	Lujala oil production dummy - onshore (observations 6920)	-0.026 (0.253)	0.318* (0.180)
	Instability	0.377 (0.329)	0.352 (0.247)
	Interaction	0.247 (0.461)	-0.222 (0.339)
Number of years with riots in the past 5 years	Indicator variables of production		
	Lujala primary diamond production (observations 6450)	-0.343 (0.497)	-0.614 (0.370)
	Riots	0.209** (0.086)	0.145** (0.065)
	Interaction	0.070 (0.185)	0.113 (0.120)
	Lujala secondary diamond production (observations 6450)	0.096 (0.325)	0.182 (0.241)
	Riots	0.219** (0.091)	0.127* (0.072)
	Interaction	0.005 (0.148)	0.096 (0.100)
	Lujala oil production dummy - offshore (observations 6450)	0.098 (0.421)	0.080 (0.278)
	Riots	0.231*** (0.088)	0.158** (0.067)
	Interaction	-0.061 (0.160)	0.080 (0.278)
	Lujala oil production dummy - onshore (observations 6450)	0.036 (0.150)	0.205 (0.211)
	Riots	0.197 (0.126)	0.162* (0.090)
	Interaction	-0.029 (0.299)	-0.008 (0.107)

Table SI.2. Determinants of civil war risk: 1946-2003

Natural resource endowments *aggravating* the problem of weak states – indicator variables

Context variable	Natural resources Context variable Interaction	Fearon and Laitin (2003) civil war	Prio \ Uppsala civil war
Ethnic fractionalization	Indicator variables of production		
	Lujala primary diamond production (observations 6920)	-0.425 (0.871)	-0.602 (0.744)
	Ethnic fractionalization	0.467 (0.389)	1.131*** (0.289)
	Interaction	0.486 (1.151)	0.482 (0.931)
	Lujala secondary diamond production (observations 6920)	-0.412 (0.569)	0.602 (0.383)
	Ethnic fractionalization	0.174 (0.425)	1.082*** (0.333)
	Interaction	1.057 (0.831)	-0.381 (0.564)
	Lujala oil production dummy - offshore (observations 6920)	-0.226 (0.612)	0.278 (0.386)
	Ethnic fractionalization	0.419 (0.386)	1.109*** (0.289)
	Interaction	0.509 (0.882)	-0.212 (0.575)
	Lujala oil production dummy - onshore (observations 6920)	-0.527 (0.409)	0.079 (0.290)
	Ethnic fractionalization	0.009 (0.454)	0.914** (0.381)
	Interaction	1.161* (0.690)	0.365 (0.482)
Excluded population	Indicator variables of production		
	Lujala primary diamond production (observations 6597)	-0.424 (0.473)	-0.114 (0.305)
	Excluded Population	0.692 (0.440)	0.872*** (0.300)
	Interaction	1.211 (1.120)	-0.494 (0.869)
	Lujala secondary diamond production (observations 6597)	0.133 (0.323)	0.626*** (0.219)
	Excluded Population	0.697 (0.537)	1.128*** (0.349)
	Interaction	0.432 (0.808)	-0.936* (0.557)
	Lujala oil production dummy - offshore (observations 6597)	-0.406 (0.461)	0.405* (0.245)
	Excluded Population	0.636 (0.426)	0.988*** (0.290)
	Interaction	1.577 (1.089)	-1.162 (0.756)
	Lujala oil production dummy - onshore (observations 6597)	-0.002 (0.264)	0.333* (0.199)
	Excluded Population	0.826* (0.465)	0.936*** (0.341)
	Interaction	0.113 (0.713)	-0.330 (0.535)

Table SI.3. Determinants of civil war risk: 1946-2003

Natural resource endowments *mitigating* the problem of weak states – indicator variables

Context variable	Natural resources Context variable Interaction	Fearon and Laitin (2003) civil war	Prio \ Uppsala civil war
Risk of coup d'état	Indicator variables of production		
	Lujala primary diamond production (observations 5135)	-0.261 (0.463)	-0.425 (0.298)
	Risk of coup d'état	0.199** (0.092)	0.214*** (0.061)
	Interaction	-0.767*** (0.245)	-0.079 (0.169)
	Lujala secondary diamond production (observations 5135)	0.324 (0.325)	0.182 (0.232)
	Risk of coup d'état	0.262*** (0.096)	0.230*** (0.065)
	Interaction	-0.479*** (0.160)	-0.072 (0.108)
	Lujala oil production dummy - offshore (observations 5135)	0.062 (0.358)	0.177 (0.221)
	Risk of coup d'état	0.194** (0.095)	0.226*** (0.063)
	Interaction	0.011 (0.167)	-0.028 (0.102)
	Lujala oil production dummy - onshore (observations 5135)	-0.388 (0.292)	0.048 (0.208)
	Risk of coup d'état	0.152 (0.104)	0.203*** (0.069)
	Interaction	0.116 (0.134)	0.025 (0.082)
Coup d'état history in past 5 years	Quantitative measures of resources endowments		
	Indicator variables of production		
	Lujala primary diamond production (observations 6775)	-0.090 (0.365)	-0.212 (0.268)
	Coup history	0.331 (0.261)	0.413** (0.183)
	Interaction	0.636 (0.831)	0.355 (0.666)
	Lujala secondary diamond production (observations 6775)	0.400 (0.271)	0.401* (0.206)
	Coup history	0.570** (0.273)	0.489** (0.205)
	Interaction	-0.952 (0.591)	-0.127 (0.357)
	Lujala oil production dummy - offshore (observations 6775)	0.166 (0.337)	0.299 (0.217)
	Coup history	0.421 (0.265)	0.527*** (0.190)
	Interaction	-0.371 (0.693)	-0.477 (0.460)
	Lujala oil production dummy - onshore (observations 6775)	-0.219 (0.250)	0.230 (0.184)
	Coup history	0.027 (0.345)	0.413* (0.242)
	Interaction	0.724 (0.456)	0.052 (0.315)
Military regime	Indicator variables of production		
	Lujala primary diamond production ²⁰ (observations 6832, 6857)	0.084 (0.339)	-0.068 (0.254)
	Military regime	0.537** (0.271)	0.744*** (0.187)
	Interaction	-	-0.552 (1.049)
	Lujala secondary diamond production (observations 6857)	0.468* (0.252)	0.515** (0.200)
	Military regime	0.754*** (0.289)	0.932*** (0.212)
	Interaction	-1.103* (0.602)	-0.632* (0.351)
	Lujala oil production dummy - offshore (observations 6857)	0.250 (0.327)	0.450** (0.213)
	Military regime	0.627** (0.281)	0.959*** (0.191)
	Interaction	-0.986 (0.831)	-1.480*** (0.568)
	Lujala oil production dummy - onshore (observations 6857)	0.055 (0.243)	0.383** (0.184)
	Military regime	0.535 (0.351)	1.008*** (0.244)
	Interaction	-0.091 (0.489)	-0.520 (0.328)

²⁰ There are no large civil war onsets (Fearon and Laitin) in countries that either have civilian governments, produce no primary diamonds or both.

Table SI 4. Correlation of key independent variables

Oil production measures

	Fearon and Laitin oil export dummy	Humphreys oil production per capita	Ross oil and gas rents per capita	Lujala oil production off-shore oil production dummy	Lujala on-shore oil production dummy
Fearon and Laitin oil export dummy	1				
Humphreys oil production per capita	0.34	1			
Ross oil and gas rents per capita	0.33	0.75	1		
Lujala off-shore oil production dummy	0.32	0.23	0.24	1	
Lujala on-shore oil production dummy	0.30	0.15	0.16	0.36	1

Diamond production measures

	Humphreys diamond production per capita	Lujala primary diamond production	Lujala secondary diamond production
Humphreys diamond production per capita	1		
Lujala primary diamond production	0.27	1	
Lujala secondary diamond production	0.06	0.47	1

Weak state measures

	Coup risk	Coup history	Military regime	Anocracy	Instability	Riot history	Ethnic frac.	Ethnic exclusion
Coup risk	1							
Coup history	0.46	1						
Military regime	0.37	0.40	1					
Anocracy	0.21	0.12	0.01	1				
Instability	0.24	0.28	0.09	0.28	1			
Riot history	-0.07	0.10	0.02	0.16	0.17	1		
Ethnic fractionalization	0.28	0.11	0.11	0.11	0.07	-0.03	1	
Ethnic exclusion	0.28	0.18	0.20	0.11	0.04	0.04	0.34	1

Table SI 5. Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Key variables					
War onset (Fearon and Laitin 2003)	7252	0.016	0.125	0	1
War onset (Lujala 2010)	7159	0.033	0.179	0	1
Coup risk	5381	0.017	2.224	-4.545	7.677
History of coups	7245	0.170	0.376	0	1
Military regime	7282	0.128	0.334	0	1
Anocracy	7172	0.232	0.422	0	1
Instability	7197	0.147	0.354	0	1
Riot history	6619	0.939	1.286	0	5
Ethnic fractionalization	7218	0.388	0.285	0.001	0.925
Excluded population percentage (Wimmer et al. 2009)	6828	0.159	0.227	0	0.980
Oil exports (Fearon and Laitin 2003)	7216	0.146	0.353	0	1.000
Oil production (Humphreys 2005)	5178	0.045	0.272	0	4.923
Oil reserves (Humphreys 2005)	5210	0.784	7	0	162
Oil and gas rents (Ross)	5999	540	3242	0	76932
Off-shore oil production (Lujala 2010)	7155	0.192	0.394	0	1
Onshore-shore oil production (Lujala 2010)	7155	0.496	0.500	0	1
Diamond production (Humphreys 2005)	5178	0.075	0.719	0	13.308
Primary diamond production (Lujala et al. 2005)	7218	0.079	0.270	0	1
Secondary diamond production (Lujala et al. 2005)	7218	0.167	0.373	0	1
Control variables					
Lagged GDP/capita	7014	3.747414	4.619362	0.048	66.735
Log of lagged population	7131	9.08466	1.452629	5.402678	14.06891
Non-contiguous	7218	0.172624	0.377948	0	1
Lagged polity score	7182	-0.26956	7.888339	-66	10
Religious fractionalization	7218	0.368256	0.218428	0	0.7828
Log of mountainous terrain	7218	2.16915	1.407055	0	4.55703