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Abstract

We study the association between resource rents and political stability, highlighting the importance of the distribution of political power as a mediating factor. We present a simple theoretical model showing that increased rents are likely to be positively associated with the stability of a powerful incumbent while destabilizing a less powerful incumbent. Our empirical analysis confirms this prediction: Using panel data for more than 120 countries from 1984-2009, our results show that rents can promote political stability, but only when the political power is sufficiently concentrated. Indeed, if the incumbent is sufficiently weak, rents fuel instability. Our main results hold when we control for time varying common shocks, country fixed effects and various additional covariates.

JEL-Code: A100, C500, E600, O110, O200, Q300, Q480.

Keywords: resource rent, political power, political stability, conflict.

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1- INTRODUCTION

Several studies suggest that higher resource rents increase political instability and intensify conflicts by funding rebel groups, weakening state institutions, and making separatism financially attractive in resource-rich regions.[1] At the same time, we observe that some of the most resource rich countries in the world are very stable: even as the Arab spring brought down regimes all over the Middle East, the Persian Gulf monarchies did not falter.

Clearly, one source of stability of resource rich countries is their ability to buy peace.[2] Shortly after the collapse of former Egyptian president Hosni Mubarak's regime in February 2011, the Saudi Arabian government announced a social welfare program worth $10.7 billion to spend on new employment opportunities and loan forgiveness, a program that reached $93 billion in March 2011. Similar initiatives were introduced in the UAE, Qatar, Oman and Bahrain.[3] But clearly, the cost of co-opting opposition groups depends on the relative power of the regime relative to the opposition; the price tag of a political stability program is likely to be lower for a powerful incumbent than a less powerful one. As higher resource rents may also make it more attractive to challenge the incumbent, whether or not rents promote political stability may crucially depend on the power balance in society.

Andersen and Aslaksen (2013) analyze the impact of resource rents on political stability, measured by leadership duration, and show that the impact is contingent on the type of resource and the type of government. In particular, oil is found to prolong the life span of regimes in autocracies, while minerals are shown to have the opposite effect. Political stability

[1] See Collier and Hoeffler (2004), Fearon and Laitin, (2003), Le Billon (2003), and Collier and Hoeffler (2004). Fearon (2005) argues that the findings of Collier and Hoeffler (2004) are sensitive to the sample and missing data. He emphasizes that oil can predict conflict not because of providing financial sources for the rebels (as argued by Collier and Hoeffler explains), but rather by making state control a tempting prize.
[2] See Arezki and Gylfason (2011), Fjelde (2009), Omgba (2009), and Basedau and Lay (2009).
[3] http://knowledgetoday.wharton.upenn.edu/2011/09/to-stave-off-arab-spring-revolts-saudi-arabia-and-fellow-gulf-countries-spend-150-billion/ (Access 6 Feb. 2014). For an analytical explanation on conflict in the Middle East see Sørli and Gleditsch (2005).

appears to be less sensitive to resource rents in democratic polities.[4] We depart from their study by emphasizing not the type of government, but rather the *strength* of government, as a key determinant of the impact of resource rents on political stability, and demonstrate that resource rents promote political stability when the incumbent is sufficiently powerful, and have a destabilizing effect when the opposition groups are strong.

The remainder of the paper is structured as follows: Section 2 presents a simple theoretical model that demonstrates how political dominance may shape the impact of increased resource rents. Section 3 discusses our empirical strategy and the data. Section 4 presents the empirical evidence and some robustness analyses. Section 5 concludes.

2- THE MODEL

There are two power groups, *a* and *b*, in society. Group *a* is the incumbent, *b* is the opposition. In order to ensure stability, the incumbent must be able to offer the opposition a transfer that at least matches its expected conflict payoff. The group in power controls rents *r* and also enjoys a non-pecuniary utility *v*, which we can think of as derived from the ability to determine policy.

The sequence of moves is as follows. At the first stage of the game, the incumbent decides how much transfers *t* to offer. At the second stage, the opposition decides whether to accept the offer or to challenge the incumbent. If the incumbent is not challenged, the transfer is paid and the game ends. If challenged, the game moves on to the next stage, where there is a power contest, with the two groups simultaneously deciding on fighting efforts, and where the Nash equilibrium defines the winning probability of each group. The winner collects the rents, leaving the loser with nothing.

[4] Dunning (2005) discusses the role of economic diversification in stability-economic performance and resource rents nexus. He argues that while economic diversification is followed by resource based states in order to reduce the negative economic effects of resource rents shocks, but diversification also forms a new social power independent of rulers in rentier countries, challenging the political stability especially at the time of economic down turn.

We assume that the incumbent can credibly commit to a transfer, and that the opposition is able to commit to not challenging the incumbent once the transfer has been received. We can think of the transfers coming in the form of government jobs, where the government can make binding job offers and where the acceptance of such jobs by the opposition also serves as a credible commitment on their part not to challenge, as it allows the government to keep a close eye on the activities of the opposition members.

Let p_i be the relative power of group i, where $p_i \in (0,1)$ and where $p_a + p_b = 1$. The closer is p to a half, the more balanced is power.

Using the logic of backward induction, we start by defining the conflict equilibrium. The winning probability is defined by the relative fighting force of each group, where the fighting force is the result of both power (p) and effort (f). The objective function of group i is given by Eq.1:

$$\pi_i = \frac{p_i f_i}{p_a f_a + p_b f_b}(v+r) - f_i \qquad (1)$$

In equilibrium, both groups exert the same effort, given by Eq.2:

$$f_a^* = f_b^* = p_a(1-p_a)(v+r) = f^* \qquad (2)$$

This implies that in equilibrium, the expected profit of fighting ,for each group, is given by Eq.3:

$$\pi_i^* = \frac{p_i f^*}{p_i f^* + (1-p_i) f^*}(v+r) - f^* = p_i^2(v+r) \qquad (3)$$

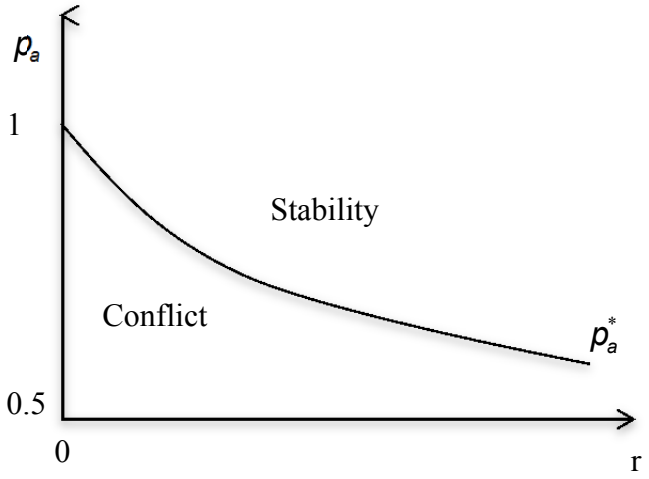
In order to pacify the opposition, the incumbent needs to make a transfer t such that the opposition prefers to work for the government rather than against it. The minimal transfer that

ensures this is given by $t^* = \pi_b^*$. Now, for the incumbent to be able to do make this transfer, it must have the necessary resources, that is, $r \geq \pi_b^*$. It can be shown that it is always profitable for the incumbent to pacify the opposition, when able to do so. The situation where this condition binds can be expressed in terms of the power balance as in Eq.4:

$$p_a = 1 - \frac{\sqrt{r(v+r)}}{v+r} \equiv p_a^* \qquad (4)$$

Figure 1 illustrates the p_a^*-curve for a given level of *v*.

Figure 1. Conflict and stability



To the right of the p_a^*-curve, there is stability, and to the left, there is conflict. For levels of p_a close to 0.5 (high degree of power balance) an increase in *r* means intensified conflict, since f^* goes up. For somewhat higher levels of p_a (a "moderately" dominant incumbent), an increase in *r* can change the equilibrium from conflict to stability, as we move from a point to the left of the p_a^*-curve to a point to the right of this curve. For high levels of p_a (high degree of power dominance) an increase in *r* simply means an even stronger control of the

incumbent. An increase in *v* tilts the curve upward around the point of intersection with the vertical axis, that is, at $p_a = 1$, making conflict a more likely outcome.

3. DATA AND EMPIRICAL SPECIFICATION

Our main prediction from the theoretical model is that the distribution of power matters for whether resource rents are a politically stabilizing or destabilizing force. In particular, such rents are more likely to have a stabilizing effect if the incumbent is powerful, while adding rents in a situation with a less dominant incumbent may lead to political instability.

We test this hypothesis using panel data for more than 120 countries from 1984-2009. To estimate whether the relationship between rents and internal stability varies systematically with the degree of dominant political power, we use the following model:

$$STAB_{it} = cons + \beta_1 \cdot RENT_{it} + \beta_2 \cdot LACK\_POWER_{it} + \beta_3 \cdot (RENT_{it} \times LACK\_POWER_{it}) + \beta_4 \cdot Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (5)$$

with country *i*, and time *t*. *STAB* is the political stability, *RENT* is the share of resource rents in GDP[5], *LACK_POWER* is a measure of (lack of) dominance of political power, *RENT*×*LACK_POWER* is the interaction of rents and power imbalance, and *Z* stands for the control variables. Political stability (*STAB*) is an assessment of political violence in the country and its actual or potential impact on governance. The *STAB* scores vary from 0 (least stable system) to 12 (most stable system). The *STAB* index is the sum of three subcomponents, each with a maximum score of 4 points and a minimum score of 0 point. A score of 4 means a very low risk and a score of 0 refers to a very high risk. These three subcomponents are civil war/coup threat, terrorism/political violence and civil disorder. The political stability (*STAB*) index is based on the *internal conflicts* index of International

[5] We investigate oil rents and total resource rents (both as share of GDP) in our estimations.

Country Risk Guide (ICRG, 2011) published by the Political Risk Services (PRS) group. The advantages of using this measure of political stability are threefold. First, it captures our notion of political instability, reflecting the struggle between power groups in society. Second, it covers the time period 1984–2009 and compared to other available datasets such as World Governance Indicators has the largest number of observations, enabling us to take advantage of the panel data method. Third, the ICRG index is widely used in the literature (see for example, Jinjarak, 2009; Farzanegan, Lessmann and Markwardt, 2013; Bjorvatn and Farzanegan, 2013). The ICRG indicators, including political stability, are based on the assessments of experts. This raises the question of the extent to which these subjective evaluations match reality. We address the potential subjective bias by using fixed effects in which we focus on within country variation of data including the political stability index (see Bezemer and Jong-A-Pin, 2012 for the similar approach).

The lack of power dominance index (*LACK_POWER*), which goes from 0 to 1, is defined as the probability that two randomly picked members of parliament from governing parties belong to different parties (Beck et al., 2001). Higher values of this index show that the government consists of a large number of small parties, lacking a dominant strong party. In other words, *higher scores for LACK_POWER* is an indicator of *weaker government*, while a lower score shows that government consist of small number of strong parties. Riker (1964) provides a theoretical basis for the positive role of strong governments for the provision of public goods and economic growth. Several studies have examined the empirical implications of the Riker's theory. For example, Poteete (2009) argues that power dominance has been important in enabling Botswana to make productive use of its natural resources. Bjorvatn, Farzanegan, and Schneider (2012, 2013) emphasize the key role of the distribution of political power for economic success in a sample of oil rich economies. The *LACK_POWER* index also fits into our resource rents-stability analysis. The lower dominance of power in political

system (higher scores of *LACK_POWER*) indicates a weaker position of incumbent in the ruling system and in negation process with other competing factions. This increases the destructive competition among factions to capture the state which is rich in rents.

The remaining variables are from the World Bank (2012). Control variables include income per capita, inflation, secondary school enrolment rate, and population growth. We also control for quality of institutions measured by rule of law, corruption and democratic accountability which are taken from the ICRG (2011). The rule of law score is from 0 (worst score) to 6 (best score) and measures the strength and impartiality of the legal system in addition to popular observance of the law. The corruption index, which is from 0 (most corrupt) to 6 (least corrupt), measures corruption in the political system such as *excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business*.

The theoretical model shows that the impact of rents on political stability depends on the distribution of political power. The interaction of *RENT* and *LACK_POWER* captures this conditional effect. According to our theoretical prediction, *the sign of this interaction term should be negative*; the higher the degree of political factionalism, the lower should be the stability effect of rents.

The marginal stability effect of rents can be calculated by examining the following partial derivative on the basis of equation (5):

$$\frac{\partial(STAB_{it})}{\partial(RENT_{it})} = \beta_1 + \beta_3 \cdot (LACK\_POWER_{it}) \qquad (6)$$

We allow for country (μ_i) and time (δ_t) specific effects, controlling for the unobservable time-invariant country characteristics and shocks which are common to all countries. There are several time-invariant country characteristics that affect the political stability of a country, increasing the risk of omitted variable bias. Such country specific factors are for example

geography, history, ethnicity among others. The fixed time effects control for shocks common to all countries such as the end of the Cold War or events related to the post-11/9 terrorist attacks. We address the arbitrary heteroskedasticity and serial correlation by using cluster-robust standard errors at the country level (Wooldridge, 2002). We use the White period coefficient covariance matrix estimator which is robust to serial correlation within countries and changing variances over time (Arellano, 1987). Appendix A presents the description and sources of the data. Table 1 reports the descriptive statistics of the major variables in our empirical analysis.

Table 1. Descriptive statistics of key variables (1984-2010)

Variable	Obs.	Mean	Standard deviation	Min	Max
STAB	3529	8.76	2.62	0	12
OIL	4813	4.49	11.64	0	105.9
RES	4813	8.14	16.15	0	214.4
LACK_POWER	3936	0.20	0.27	0	1
OIL×LACK_POWER	3687	0.65	3.54	0	62.22
RES×LACK_POWER	3687	1.33	5.10	0	75.6

Note: *STAB*, *OIL*, *RES*, and LACK_*POWER* refer to ICRG internal conflict index, share of oil rents in GDP, share of total natural resource rents in GDP, and the lack of dominant political power, respectively. There are two countries whose total resource rents as a share of GDP exceeds 100%: Iraq and Turkmenistan.

4- RESULTS

Table 2 reports the estimates of the equation (5), using data covering the period from 1984-2009. Our specific model includes our three main variables of interest, namely *OIL*, *LACK_POWER*, and in particular their interaction term, *OIL*LACK_POWER,* which, for short, we shall refer to as the "OP-interaction". We add other control variables in subsequent

models. Using this approach enables us to examine the robustness of the interaction term between *OIL* and *LACK_POWER* across different specifications. All our regressions are based on panels and include a full set of country and time fixed effects. In Model 2.2, the stability effect of oil rents is positive and statistically significant at the 10% level. This positive effect is reduced significantly by lower dominance of political power. The OP-interaction is negative and significant at the 5% level. This shows that the stabilizing impact of oil rents indeed depends on the level of political dominance in the economy. To test the robustness of our main hypothesis, we add other control variables such as *income* (log of real GDP per capita), *inflation* (consumer price index growth rate), *education* (gross secondary school enrollment rate), and *population growth* rate in Models 2.3 - 2.7. Furthermore, we examine the role of *corruption*, *rule of law* and their interaction terms with oil rents in Models 2.8-2.9.

Adding other control variables to our initial specification does not change the direction and statistical significance of the OP-interaction. The impact of income on stability is positive but generally not significant. A higher inflation rate destabilizes the political system. This negative effect is statistically highly significant but its magnitude is close to zero. Education shows a pro-stability effect but is never statistically significant. Increasing population growth rates increases pressures on the stability of the political system. Another important control variable is the degree of (lack of) corruption. We use the ICRG corruption index, which is an assessment of corruption within the political system. It is from 0 (most corrupt) to 6 (least corrupt). Thus we call it "*the lack of corruption*" index. This index of corruption is frequently used in the literature (e.g., Knack and Keefer, 1995; Bhattacharyya and Hodler, 2010; Fredriksson and Svensson, 2003, and Biswas, Farzanegan and Thum, 2012). Our results show that *lack of corruption* has a positive and statistically significant effect on political stability in Models 2.8 and 2.10. This is in line with Fjelde (2009). Again in agreement with Fjelde

(2009) the interaction of oil rents and the (lack of) corruption variable is not statistically significant after controlling for country and time fixed effects. Models 2.8 and 2.9 control for the interaction of lack of corruption and rule of law with oil rents. Interestingly, our main interaction term remains negative and statistically significant, while none of the newly added interactions are statistically significant.

Does the OP-interaction term depend on the level of corruption or rule of law? To examine this issue, we include a triple interaction term in Model 2.10 (*OIL*LACK_POWER*LACK_CORRUPTION*). We notice that this triple interaction term is not statistically significant, implying that the effect of the OP-interaction on political stability is independent of corruption in a country. Apart from role of corruption, we also examine the direct effect of rule of law on political stability and its moderating role in shaping the oil rents, power balance and stability nexus. We use the law and order index of ICRG. The law sub-component is an evaluation of the strength and impartiality of the legal system, while the order sub-component is an assessment of popular observance of the law. It is from 0 (least level of rule of law) to 6 (highest level of rule of law). As is shown in Models 2.9 and 2.11, positive stability effect of rule of law is highly significant. Countries with higher quality of law and order enjoy a higher degree of political stability or less internal conflict.

Does the OP-interaction depend on the rule of law? To test this case, we include a triple interaction (*OIL*LACK_POWER*LAW*) in Model 2.11. This triple interaction is positive and statistically significant in Models 2.11 at the 10% level, which implies that rule of law can reduce the destabilizing effect of oil revenues in countries with weak governments. Our main interaction term, however, remains robust and highly significant at the 1% level after controlling for triple interaction between oil, lack of power and law. The explanatory power of all models is adequate. On average, 70% of variation in the political stability variable is explained by independent variables.

To calculate the marginal stability effect of oil rents we only focus on the moderating role of lack of political power dominance (Model 2.2). The stability impact of a marginal increase in the size of oil rents in GDP implied by Model 2.2 is:

$$\frac{\partial(STAB_{it})}{\partial(OIL_{it})} = 0.02 - 0.03 \cdot (LACK\_POWER_{it}) \quad (7)$$

In countries with a higher than *LACK_POWER* of 0.66 (= 0.02/0.03), an increase in oil rents leads to lower political stability. In our sample, there are several countries with *LACK_POWER* of more than 0.66 in at least one year of analysis.[6]

In Table 3, for robustness analysis, we use total natural resource rents (as a share of GDP), estimating similar specifications as in Table 2. Total rents are the sum of oil, natural gas, coal, mineral, and forest rents. Our results in Table 3 show that the OP-interaction term is robust (significant in all models except for 3.10), indicating that increasing lack of political power has a destabilizing effect in resource rich economies (and not only in oil countries). We also observe that the main interaction term is not dependent on rule of law or corruption (as shown by the insignificant triple interactions in models 3.10 and 3.11).

In addition to fixed effect estimations, we also re-estimate model 3.7 in which we have our main variables of interest and a set of main control variables using the dynamic GMM method.[7] In a dynamic panel model, we control for possible persistence in the dependent variable (political stability) by including the lag of political stability on the right hand side of model. There is also an endogeneity concern regarding some of our main variables which makes the application of GMM method more appealing. In re-estimating model 3.7, we apply difference GMM for estimation in which country specific unobserved effects are removed by

[6] Algeria (1998,1999, 2000, 2001, and 2002), Colombia (2007, 2008, 2009), Republic of Congo (2008, 2009), Ecuador (1984, 1987, 1988, 1991, 1992), Iraq (2006, 2007, 2008, 2009), Kuwait (1993 until 2003), Malaysia (2000 until 2004), Papua New Guinea (1994 until 2002), Russia (1995), Suriname (1990 until 1993), and Uzbekistan (2000, 2002 until 2008).

[7] The GMM estimator was introduced by Arellano and Bond (1991), and further developed by Arellano and Bover (1995) and Blundell and Bond (1998).

using a first differencing transformation. We also control for the time fixed effects. First differencing also addresses the possible time trend in variables, reducing the non-stationary concern. Difference GMM applies lagged values of the dependent and independent variables as instruments for the current independent variables. We make judgements about the validity of the instruments by checking the Sargan test p-value. The validity of the instrument variables should not be rejected by Sargan test (Arellano and Bond, 1991). Also we look at AR (2) test for serial correlation in the first-differenced residuals, under the null of no serial correlation. The *p*-value of AR (2) statistic should be insignificant (Arellano and Bond, 1991). The GMM results support our earlier findings: if the incumbent is sufficiently weak, resource rents fuels instability. The lag of stability is positively and significantly correlated with current stability, suggesting considerable persistence. It is, however, statistically different from unity.[8] The diagnostics are also satisfactory: the Sargan test does not reject the over-identification restrictions, and the absence of second order serial correlation is not rejected.

5- CONCLUSION

We study how the impact of increases in resource rents on political stability may be contingent on the distribution of political power. Using a simple theoretic model, we show that resource rents are likely to weaken a weak incumbent and strengthen a strong incumbent. To test this prediction, we use a panel data covering the period 1984–2009 and more than 120 countries. Our theoretical prediction is supported by the data. In particular, rents are associated with political instability and conflict in countries with a weak government, more precisely, where the lack of power index exceeds 0.66 (from maximum score of 1). Our main results hold when we control for the effects of income, inflation, education, population

[8] According to Roodman (2007), in order to have dynamic stability in GMM, the estimated coefficient of lagged dependent variable (in our case *STAB*) should be lower than unity. The estimated coefficient on the lagged dependent variable (*STAB* in model 3.7 GMM) is 0.7, which means that the steady-state assumption holds.

growth, time varying common shocks, country fixed effects, and quality of institutions (corruption and rule of law).

We believe our results can shed light on current political changes in the Middle East. For instance, the homogenous rentier states at the southern borders of the Persian Gulf were able to manage the contagion effects of Arab spring, through a combination of increased welfare and security spending. Clearly, in these societies resource wealth has been an important stabilizing factor. Our results show, however, that in countries with a less dominating élite, resource rents can have quite the opposite effect on political stability.

Table 2. Stability effects of *oil rents* and lack of dominant political power– effective sample period: 1984-2009

	Dependent variable: *STAB* (ICRG internal conflict index)										
Models	**(2.1)**	**(2.2)**	**(2.3)**	**(2.4)**	**(2.5)**	**(2.6)**	**(2.7)**	**(2.8)**	**(2.9)**	**(2.10)**	**(2.11)**
OIL	0.02	0.029*	0.037**	0.034*	0.031**	0.029*	0.029	0.010	0.03	0.009	0.04
	(1.48)	(1.85)	(1.91)	(1.71)	(1.93)	(1.85)	(1.31)	(0.38)	(0.93)	(0.33)	(1.24)
LACK_POWER	-0.38	-0.20	-0.20	-0.01	-0.05	-0.20	0.10	0.11	0.15	-0.06	0.73
	(-1.15)	(-0.62)	(-0.63)	(-0.04)	(-0.18)	(-0.64)	(0.33)	(0.37)	(0.55)	(-0.08)	(1.04)
*OIL*LACK_POWER*		-0.033**	-0.032**	-0.037**	-0.04	-0.034**	-0.048**	-0.042*	-0.036*	-0.03	-0.10***
		(-1.94)	(-1.94)	(-2.27)	(-1.45)	(-2.04)	(-1.96)	(-1.81)	(-1.67)	(-1.00)	(-3.06)
LOG(INCOME)			0.36				0.95	1.10*	0.01	1.09*	-0.02
			(0.70)				(1.44)	(1.74)	(0.02)	(1.74)	(-0.04)
INFLATION				-0.00*			-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
				(-1.90)			(-4.05)	(-5.22)	(-2.67)	(-5.34)	(-2.51)
EDUCATION					0.01		0.003	0.005	0.006	0.004	0.005
					(1.27)		(0.40)	(0.63)	(0.85)	(0.60)	(0.83)
POP-GROWTH						0.09	-0.25**	-0.23**	-0.10	-0.23**	-0.10
						(0.92)	(-2.35)	(-2.38)	(-1.11)	(-2.38)	(-1.05)
LACK_CORRUPTION								0.37***		0.36***	
								(3.26)		(3.08)	
*OIL*LACK_CORRUPTION*								0.01		-0.003	
								(1.09)		(-0.19)	
LAW									0.92***		0.96***
									(10.37)		(9.33)
*OIL*LAW*									-0.002		-0.006
									(-0.26)		(-0.62)
*OIL*LACK_POWER*LACK_CORRUPTION*										0.01	
										(1.03)	
*LACK_POWER*LACK_CORRUPTION*										0.06	
										(0.27)	
*OIL*LACK_POWER* LAW*											0.02*
											(1.79)
LACK_POWER LAW*											-0.16
											(-1.08)
Observations	2949	2949	2919	2721	2275	2946	2110	2110	2110	2110	2110
Number of countries	134	134	133	130	133	134	127	127	127	127	127
Adj. R-sq	0.67	0.67	0.67	0.67	0.70	0.67	0.70	0.71	0.77	0.71	0.77

Notes: The method of estimation is panel OLS (country and time fixed effects). The constant term is included (not reported). *t statistics* shown in parenthesis are based on robust standard errors which are clustered at the country level (the *White period* method). *Significantly different from zero at 90%, **95%, and *** 99% confidence.

Table 3. Stability effects of *total resource rents* and lack of dominant political power– effective sample period: 1984-2009

	Dependent variable: *STAB* (ICRG internal conflict index)											
Models	**(3.1)**	**(3.2)**	**(3.3)**	**(3.4)**	**(3.5)**	**(3.6)**	**(3.7)**	**(3.7, GMM)**	**(3.8)**	**(3.9)**	**(3.10)**	**(3.11)**
RES	0.007	0.012	0.013	0.017	0.018	0.012	0.013	-0.001	0.013	0.015	0.013	0.029
	(0.59)	(0.96)	(0.85)	(1.16)	(1.28)	(1.02)	(0.77)	(-0.27)	(0.63)	(0.63)	(0.57)	(1.09)
LACK_POWER	-0.36	-0.09	-0.10	0.13	0.10	-0.09	0.25	0.45***	0.24	0.26	0.18	1.05
	(-1.11)	(-0.30)	(-0.32)	(0.40)	(0.31)	(-0.30)	(0.77)	(3.46)	(0.78)	(0.93)	(0.23)	(1.45)
*RES*LACK_POWER*		-0.03*	-0.03*	-0.03**	-0.04*	-0.03**	-0.04**	-0.03***	-0.04*	-0.03*	-0.04	-0.09**
		(-1.87)	(-1.85)	(-2.40)	(-1.73)	(-1.99)	(-1.99)	(-3.37)	(-1.94)	(-1.66)	(-1.06)	(-2.46)
LOG(INCOME)			0.32				0.91	0.52**	1.08*	-0.02	1.08*	-0.07
			(0.65)				(1.38)	(2.11)	(1.68)	(-0.03)	(1.68)	(-0.12)
INFLATION				-0.0001**			-0.0003***	0.00	-0.0003***	-0.0001***	-0.0003***	-0.0001***
				(-1.98)			(-4.04)	(1.47)	(-5.00)	(-2.82)	(-5.10)	(-2.85)
EDUCATION					0.009		0.003	-0.02***	0.004	0.006	0.004	0.006
					(1.22)		(0.39)	(-4.91)	(0.57)	(0.87)	(0.55)	(0.84)
POP-GROWTH						0.09	-0.24**	-0.39***	-0.23**	-0.10	-0.23**	-0.10
						(0.98)	(-2.36)	(-5.24)	(-2.34)	(-1.07)	(-2.35)	(-1.03)
LACK_CORRUPTION									0.40***		0.39***	
									(3.53)		(3.45)	
*RES*LACK_CORRUPTION*									0.0005		0.0009	
									(0.05)		(0.08)	
LAW										0.91***		0.96***
										(10.0)		(9.16)
*RES*LAW*										0.0002		-0.003
										(0.04)		(-0.48)
*RES*LACK_POWER*LACK_CORRUPTION*											-0.002	
											(-0.11)	
*LACK_POWER*LACK_CORRUPTION*											0.02	
											(0.10)	
*RES*LACK_POWER* LAW*												0.01
												(1.58)
LACK_POWER LAW*												-0.22
												(-1.39)
STAB (-1)								0.70***				
								(33.1)				

Observations	2949	2949	2919	2721	2275	2946	2110	1570	2110	2110	2110	2110
Number of countries	134	134	133	130	133	134	127	120	127	127	127	127
Adj. R-sq	0.67	0.67	0.67	0.67	0.70	0.67	0.70		0.71	0.77	0.71	0.77
Sargan (p-value)								0.30				
AR(2)- p-value								0.99				

Note: Notes: The method of estimation is panel OLS (country and time fixed effects). The constant term is included (not reported). *t statistics* shown in parenthesis are based on robust standard errors which are clustered at the country level
(the *White period* method). *Significantly different from zero at 90%, **95%, and *** 99% confidence. For GMM estimation in model 3.7 we use 2 years lag of dependent and independent variables.

References

Andersen, J.J., Aslaksen, S., 2013. Oil and political survival. Journal of Development Economics 100, 89-106.

Arellano, M., 1987. Computing robust standard errors for within-groups estimators. Oxford Bulletin of Economics & Statistics 49, 431-434.

Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Review of Economic Studies 58, 277-297.

Arellano, M., Bover, O., 1995. Another look at the instrumental variable estimation of error-components models. Journal of Econometrics 68, 29-51.

Arezki, R., Gylfason, T., 2011. Resource rents, democracy and corruption: evidence from Sub-Saharan Africa. CESifo Working Paper Series No. 3575.

Basedau, M., Lay, J., 2009. Resource curse or rentier peace? The ambiguous effects of oil wealth and oil dependence on violent conflict. Journal of Peace Research 46, 757-776.

Beck, T., Clarke, G., Groff, A., Keefer, P., Walsh, P., 2001. New tools in comparative political economy: the database of political institutions. World Bank Economic Review 15, 165–176.

Bezemer, D., Jong-A-Pin, R., 2012. Democracy, globalization and ethnic violence. Journal of Comparative Economics 41, 108–125. .

Bhattacharyya, S., Hodler, R., 2010. Natural resources, democracy and corruption. European Economic Review 54, 608-621.

Biswas, A., Farzanegan, M.R., Thum, M., 2012. Pollution, shadow economy and corruption: Theory and evidence. Ecological Economics 75, 114–125

Bjorvatn, K., Farzanegan, M.R., 2013. Demographic transition in resource rich countries: a blessing or a curse? World Development 45, 337–351.

Bjorvatn, K., Farzanegan, M.R., Schneider, F., 2013. Resource curse and power balance: evidence from Iran. Review of Middle East Economics and Finance 9, 133–158.

Bjorvatn, K., Farzanegan, M.R., Schneider, F., 2012. Resource curse and power balance: evidence from oil-rich countries. World Development 40, 1308-1316

Blundell, R., Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics 87, 115-143.

Collier, P., Hoeffler, A., 2004. Greed and grievance in civil war. Oxford Economic Papers 56, 563-595.

Dunning, T., 2005. Resource dependence, economic performance, and political stability. Journal of Conflict Resolution 49, 451-482.

Farzanegan, M.R., Lessmann, C., Markwardt, G., 2013. Natural-Resource Rents and Internal Conflicts –Can Decentralization Lift the Curse? CESifo Working Paper No. 4180, Munich.

Fearon, J.D., 2005. Primary commodity exports and civil war. Journal of Conflict Resolution 49, 483-507.

Fearon, J. D., Laitin, D. D., 2003. Ethnicity, insurgency, and civil war. American Political Science Review 97, 75-90.

Fjelde, H., 2009. Buying peace? Oil wealth, corruption and civil war, 1985-99. Journal of Peace Research 46, 199-218.

Fredriksson, P.G., Svensson, J., 2003. Political instability, corruption and policy formation: the case of environmental policy. Journal of Public Economics 87, 1383-1405.

ICRG, 2011. International Country Risk Guide. The PRS Group, New York.

Jinjarak, Y., 2009. Trade variety and political conflict: Some international evidence. Economics Letters 103, 26–28.

Knack, S., Keefer, P., 1995. Institutions and economic performance: cross-country tests using alternative institutional measures. Economics and Politics 7, 207-227.

Le Billon, P., 2003. Buying peace or fuelling war: the role of corruption in armed conflicts. Journal of International Development 15, 413-426.

Omgba, L.D., 2009. On the duration of political power in Africa: the role of oil rents. Comparative Political Studies 42, 416-436.

Poteete, A. R., 2009. Is development path dependent or political? A reinterpretation of mineral- dependent development in Botswana. Journal of Development Studies 45, 544–571.

Riker, W., 1964. Federalism: Origins, Operation, Significance. Little, Brown and Co, Boston, MA.

Roodman, D., 2007. A short note on the theme of too many instruments. Center for Global Development Working Paper No. 125.

Sørli, M.E., Gleditsch, N. P., 2005. Why is there so much conflict in the Middle East? Journal of Conflict Resolution 49, 141-165.

Wooldridge, J. M., 2002. Econometric analysis of cross section and panel data. Cambridge, MA: MIT Press.

World Bank, 2012. World development indicator. Washington D.C.: World Bank.