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DO NATURAL RESOURCES INHIBIT TRANSPARENCY?

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Abstract

Using a new dataset on transparency across 177 countries from 1970 to 2010 and new data on oil values that is measured independently of countries' reporting mechanisms, we examine whether the presence of income derived from the extraction of oil and other mineral resources induces governance institutions to become less transparent. The new transparency data permits panel estimates that were not previously feasible, while the new oil data addresses an endogeneity problem otherwise inherent in countries' own reporting of data to the World Bank, thus a major improvement over WDI data. Our results confirm the previous findings that the presence of oil adversely influences transparency, but contradict findings on mineral resources. Transparency is measured by the frequency and extent of data that countries report to international agencies. Our findings suggest that transparency is robustly and adversely linked to income from oil, but not other mineral resources. Conducting "era regressions," we shed some light on the evolution of this effect across decades.

JEL Classification: O4, Q0, P16

Keywords: Natural Resources, Transparency, Governance Institutions

ملخص

باستخدام مجموعة بيانات جديدة عن الشفافية في 177 بلدا في الفترة 1970-2010 وبيانات جديدة عن قيمة النفط والتي تقاس بشكل مستقل عن آليات التقارير في البلدان، قمنا بفحص ما إذا كان وجود الدخل المتأتي من استخراج النفط وغيرها من الموارد المعدنية يدفع مؤسسات الحكم لتصبح أقل شفافية. تتيح تقديرات لوحة بيانات الشفافية الجديدة التي لم تكن ممكنة في السابق، في حين تتناول بيانات النفط الجديدة مشكلة النمو الداخلي الكامنة خلاف ذلك في تقارير البلدان الخاصة عن بيانات للبنك الدولي، وبالتالي هناك تحسن كبير في مؤشرات التنمية العالمية. نتائجنا تؤكد النتائج السابقة على أن وجود النفط له تأثيرات سلبية على الشفافية، ولكن الموارد المعدنية تناقض هذه النتائج. يتم قياس الشفافية من خلال وتيرة ومدى البيانات التي تبلغها البلدان إلى الوكالات الدولية. وتشير النتائج التي توصلنا إليها أن الشفافية مرتبطة سلبا وبقوة بالدخل من النفط، ولكن على عكس غيرها من الموارد المعدنية. نقوم بإلقاء بعض الضوء على تطور تأثير إجراء "انحدارات العصر"، عبر العقود.

1. Introduction

The question of whether countries endowed with natural resources may actually be harmed by their presence – a syndrome known as the “resource curse” – has occupied researchers for nearly two decades. While much has been written on growth effects of natural resources, an equally compelling question is whether natural resource wealth affects the quality and transparency of government institutions.¹ The question is of particular importance for the developing world in general, and Middle East and North Africa (MENA) countries in particular.²

A number of studies suggest that natural resources may have a detrimental effect on many types of political institutions (Ross 2012; Tsui 2010; Stevens and Dietsche 2008; Wick and Bulte 2009 and Frankel 2010). However, when scholars focus on government transparency, the effect is more nuanced, showing up only for oil producers, and only for authoritarian states, if transparency is measured by press freedom (Egorov, Guriev and Sonin 2009) or if it is measured by the transparency of government budgets (Ross 2011). These results have four notable limitations. First, due to data limitations some of these analyses have been limited to cross-national comparisons, giving us little insight into dynamic effects. Second, there are reasons to worry about endogeneity: greater transparency could cause less corruption, more investment, and greater fiscal discipline, but it could also be the result of these factors. These correlations could also be spurious, if both transparency and its observed correlates are jointly driven by other unmeasured factors (Ross, 2011). Third, the effect of democracy on transparency itself may be more complicated and nonlinear in transitional societies (Mohtadi and Roe 2003). Fourth, the mechanisms that could explain the correlation between natural resources and (a lack of) transparency are unclear. In this paper we address the first three issues.³

Our ability to address these existing gaps is made possible by a unique dataset that allows us to use panel estimation techniques and hence examine within-country effects over time. The data cover 1970 to 2010 for 177⁴ countries (Williams 2009 & 2011) and measure transparency by the extent to which countries report data to the World Bank and the International Monetary Fund (IMF). Admittedly this is a narrow definition of transparency, but there are few alternatives.⁵

Using the new dataset, our cross-sectional, pooled cross-sectional and panel estimation results are generally consistent and suggest that income from oil, but not other mineral resources, has a

¹The effect of resources on economic growth may not be independent of their effect on institutions. Rodrik, Subramanian and Trebbi (2004) call institutions the “deep determinants” of growth. Easterly (2005) finds that among various factors influencing economic growth, institutions are among the most robust. Easterly and Levine (2002) find that the effect of geography on development works through institutions and not directly. Alexeev and Conrad (2009) have questioned the existence of either effect by arguing that an inflated base-year per capita value is responsible for this effect. However, Mehlum, Moene and Torvik (2006) show that such income-boosting effects do not hold if institutions are “grabber friendly,” but that resources actually encourage rent grabbing in the first place remains a possibility (van der Ploeg, 2011).

²In their comprehensive and thoughtful survey of the literature on the various mechanisms of the resources curse, and its relevance to the role played by oil in the Arab World, Elbadawi and Gelb (2010) point to the study of the role of institutions as a key area for further research.

³ The fourth issue, entailing the mechanism that explains the association between resources and transparency is the subject of a research in progress by the authors. In that work we both model and examine the hypothesis that revenues from oil wealth reduce states’ dependence on other sources of revenue, and especially revenues from income taxes. As a result, the need for a government to form social consensus with its citizens in order to elicit greater tax compliance breaks down. Transparency is a critical component of such a consensus as it allows for accountability, a necessary ingredient for eliciting citizen tax compliance.

⁴ This is the number of countries in the cross-sectional mineral rents regression; regressions using oil value as the dependent variable are limited to 160 countries.

⁵ For example, one alternative data source on transparency, developed by the World Economic Forum, is based on a survey of businessmen and is thus subjective. Its coverage of countries and years is also limited.

strong, negative effect on transparency. Our panel estimates are also consistent with Ross's (2011) cross sectional estimations on oil, but not on mineral resources.

Among our key findings is that oil is associated with subversion of transparency when it comprises a significant share of national income, an indicator of a country's *oil dependence*, but not when it represents a higher average wealth of the country, an indicator of *oil abundance*. We speculate that when oil value commands a significant share of the national income it dominates national economic activity and the government's budget. This bestows policy makers with much power. It enables them to not only direct resources for public policy, but to also divert resources away from public use. Diversion of resources naturally requires opacity. No such mechanism exists when oil value represents a higher average wealth of society. The exception is the MENA group. Here, we find that the measure of oil abundance plays as much of a role as oil dependence. However, for the MENA region we find large additional adverse effects of oil on transparency - above and beyond the world on average. Our results for mineral resources are both weak and inconsistent. We provide explanations for why this may be the case.

In what follows, section 2 details measure and data; section 3 presents the econometric model and results, and section 4 provides concluding remarks.

2. Measurement and Data

2.1 Measuring resource rents

Our goal is to identify the relationship between resources and government transparency. To distinguish the effect of resources on transparency from the effects of income on transparency we must have a suitable measure of resources. Three issues arise in this context. First, instead of focusing on the export of resources, we will focus on the production of resources (see also Ross 2011 on this point). Exports of a resource are higher not only when a country produces a higher volume of that resource, but also when it is too poor to consume or process the resource domestically. By focusing on resources produced (not exported) we avoid this problem. Second, the question arises whether we should measure the value of resources per capita or per GDP. The first is a measure of resource *abundance* and tells us about the domestic significance of a country's resources, while the second is a measure of resource *dependence* and reflects the importance of the resource in the overall economic activity of the country. The two measures produce significantly different results, which gives us insight into the conditions under which resources may hurt transparency.

The third question is about the data itself. Data on resource rents are available from the World Development Indicators (WDI). But there are several problems associated with using this data. First, while the measure of rents nets out the cost of production of a resource, and therefore in theory seems a suitable measure, in practice the measure of the cost is a rough estimate taken at a single point in time and is heavily dependent on accounting assumptions; it is hence both uncertain and does not reflect temporal variations in extraction costs, which can be very large. Second, using the WDI 'rents' measures may also create an endogeneity problem: the measure relies on countries reporting their resource data to the World Bank and since our measure of transparency is based on the frequency and extent of reporting of data by countries (see next section), any missing observations may be an indication of low transparency rather than randomly distributed. Third, besides this endogeneity problem, missing observations would be dropped from our data, and this could bias our estimate of oil's impact. Fourth, due to many cases of such missing observations, the scope of the coverage of WDI's resource rent data is

somewhat limited, especially when interacted with other variables that we will need for our analysis.

To circumvent all these problems, we will use an alternative natural resource measure, namely “oil and gas value” which is available from Ross (2013). The Ross measure is simply the value of oil and gas extracted in a given year multiplied by the per-unit world price; the underlying production data are collected from the World Bank, the US Energy Information Administration, the BP Statistical Review, and the US Geological Survey. Due to its approximate independence from the pure WDI measure, this measure allows us to circumvent the above endogeneity issue to a large extent and yet it is highly correlated with the WDI measure.⁶ Furthermore, our measure is able to avoid the thorny challenge of estimating extraction costs. Consequently, it is able to cover nearly all countries. Since there is no comparable measure for the value of mineral production we are compelled to use the WDI measure. Unlike the WDI measure of fossil fuel production, however, the WDI mineral production measure covers almost all countries and is therefore unlikely to lead to biased estimates due to nonrandom “missingness.”

All resource rent information enters our regression in the form of natural log of (1+rent) to both account for the highly skewed nature of the data on resource rents and to avoid the problem of infinity for cases where rent is zero.

2.2 Measuring transparency

Several measures of government transparency have been used in earlier studies. While Ross (2011) uses the Open Budget Index (OBI) from International Budget Partnership (2008) to measure the fiscal transparency of governments, other authors use data on press freedom and membership in the Extractive Industries Transparency Initiative (EITI). The OBI score has several problems: it is only available for the years 2006, 2008, and 2010, and the information is not fully comparable over years; moreover, it is collected for just 85 countries. While measures of press freedom are available over longer periods and are comparable across time, they may or may not inform us about the transparency of governments themselves. Mohtadi and Ruediger (2012) use data from the World Economic Forum (WEF) that measures “the transparency of government policy,” although the data is available from 2000 to 2009, is not consistently reported and is based on survey responses, thus telling us more about perceptions of transparency rather than actual transparency.

The measure developed and compiled by Williams (2009) addresses a number of these shortcomings. This index, called the Release of Information (RI) index, counts the frequency and extent of annual data released by governments and published in World Bank’s World Development Indicators (WDI) and the IMF’s International Financial Statistics. Its main advantage is its annual availability from 1970 to 2010, covering every country listed in WDI.⁷ While simply counting the amount of information is not an accurate measure of the quality of information released by governments, Williams (2011) shows that the RI index is highly correlated with World Bank’s Statistical Capacity index and thus is also able to measure the quality of information released by governments.⁸

⁶ Correlation coefficient = 0.9814

⁷ For additional information about the Release of Information index please see Williams (2009, 2011).

⁸ Hollyer, Rosendorff, and Vreeland (2014) have produced a similar measure.

We expect a country's resource wealth to affect its RI score in two ways: resource wealth can make countries less reliant on the World Bank and IMF for assistance, which in turn may reduce their incentive to make costly information disclosures to these organizations; and by endowing the government with large rents, it may give political leaders an incentive to conceal these rents, and thus information about government operations, from its citizens. We suspect these two issues are related: if a government releases information to an international financial institution, it will probably become available to its citizens.

In light of the foregoing discussion, there is good reason to believe that a country's RI index tells us something about the extent of domestic, as well as international, information dissemination. The correlation between OBI 2006 and RI 2005 is 0.58 which suggests that RI index and OBI measure roughly similar forms of transparency. Furthermore, the correlation of the average of WEF data for the year 2000 to 2005 with the average of the RI index from 2000 to 2005 is 0.40 for "the strength of audit and reporting standards," but only 0.18 for "the transparency of government policies." However, the latter suffers from other shortcomings as stated above. This leads us to believe that the RI index is an appropriate measure of government transparency, especially since alternative measures suffer from the shortcomings described above.

2.3 Measuring political regime

As part of our investigation of the relationship between transparency, political regime and natural resources, we need to be able to measure the political regime of each country per year of the panel. To measure if a country is a democracy or an autocracy we rely on data from Cheibub, Gandhi and Vreeland (2010). Using their data we create a dummy variable equal to 1 for democracies and equal to zero for autocracies. We also incorporate a polity variable (Polity2⁹ from Polity IV dataset) which classifies the form of government on a scale from -10 to +10. This variable is distinct from the democracy dummy in its ability to measure incremental changes in its constituent components, such as, for example, changes in the authority of executives or in voting rights, etc... In this way this variable is better able to measure the potential interplay between the forms of government and the level of transparency of a country. We will use both type of variables, Polity2 and the dummy variable. The reason is Polity2, at times, exhibits a degree of endogeneity that we could not overcome (this will be discussed extensively). In these instances, the ability of the dummy variable to allow us to stratify our sample into democracy and autocracy subsamples turns out to be a valuable tool.

2.4 Other variables

Natural resources are not the only variables affecting the transparency of a country. To account for other economic conditions we include three other explanatory variables in our core regression: the log of per capita income, gross secondary school enrollment ratio (WDI), and government consumption. The first two represent the domestic demand for transparency: we expect countries whose populations are wealthier and better educated to demand more information from their governments.

The third variable represents the size of government relative to the economy. Two arguments support the inclusion of this variable in the regressions. First, size entails greater bureaucracy. In

⁹ For the purpose of estimation we believe that the use of the Polity 2 variable is preferred to the use of the original polity variable. The polity variable includes the values -88 (transition), -77 (anarchy or interregnum), -66 (foreign interruption), which would make the interpretation of the marginal effect difficult since the Polity 2 variable treats -66 as a missing observation, converts -77 to 0 and uses a moving average for the transition years in the case of -88.

turn, greater bureaucracy entails reduced coherence in the information dissemination process. Second, it might be expected that where institutions are weak large governments exert greater influence on the economy and society at large, including greater arbitrariness in the dissemination of information. Both of these factors are distinct from the potential influence of natural resources themselves. Thus, controlling for the government size may permit us to better isolate the resource effect on transparency. Yet government size itself may be affected by the size of resource rents to some extent. Even when such an influence might be present, the need to isolate the direct effect of natural resources on transparency from its potential indirect effect via government size warrants inclusion of the latter as a control.

Finally, to reduce the risk of endogeneity, all explanatory variables enter the regressions with a lag of one period, except of course in our benchmark cross sectional regressions (the lingering issues of endogeneity are addressed in section 3.4 in greater depth).

To reduce the effects of any missing data on independent variables we average our observations over time, not only in the cross sectional regressions, but also in the panel regressions as 5-year averages.

3. Methodology and Results

3.1 Benchmark cross sectional regressions

The first step in our analysis is to estimate a simple cross sectional OLS regression in which all variables are averaged over the entire period of coverage with the usual corrections for heteroskedasticity. This will allow us to highlight the potential added value of adding anew RI data, relative to earlier cross sectional studies that used alternative measures of transparency. The results are reported in Tables 1a through 1d depending on the measure of resource used. For Table 1a this is *oil values as a share of GDP*; for table 1b it is *oil values per capita*; for table 1c it is *mineral rents as a share of GDP*; and for table 1d it is *mineral rents per capita* (the same pattern will be repeated for other regression methodologies in subsequent tables). The distinction between oil and minerals (non-oil) follows their potentially distinct impact in the literature (Ross 2011). We find the distinction between oil values per capita and oil values per GDP may help us specify the conditions under which the extraction of a given amount of oil wealth is likely to crowd out transparency.

Our results from Table 1a suggest that *oil value as a share of GDP* has a highly significant and large negative effect on transparency for the full sample of countries under all specifications. When we break the sample into democracies and autocracies, the adverse effect shows up in two of three specifications under autocracies and one of three specifications under democracies.¹⁰ Surprisingly, no such adverse effect shows up when *oil value per capita* is used as a measure of resources instead. In fact, the effect is slightly positive and significant (but with small coefficients) for democracies. A similar pattern will hold with small variations across all of our methodologies as will be seen below. It thus seems that the “oil curse” in the sense of subverting transparency shows up when oil value is a significant share of national income but not when it represents a higher average wealth of the country. What is a theoretical explanation for such a finding? One might speculate that when oil value commands a significant share of the national

¹⁰Although we also observe a much weaker but negative effect of oil among democracies, this effect is significant only in the model where Polity 2 is introduced as a control. However, the latter suffer from some endogeneity as discussed in Section 3.4, affecting the size of other coefficients as well. For this reason the negative effect of oil rent in democracies must be somewhat discounted.

income it dominates national economic activity and the government's budget. This bestows policy makers with much power. It enables them to not only direct resources for public policy but also to divert resources away from public use. Diversion of resources naturally requires opacity. No such mechanism exists when oil value represents a higher average wealth of society.

Tables 1c and 1d are symmetric to Tables 1a and 1b except that mineral rents (from WDI) are used instead of independently measured oil values. Table 1c, which uses *mineral rents per GDP*, shows no such adverse effect, while Table 1d, which uses *mineral rents per capita*, actually shows a positive and significant effect, although the values of coefficients are quite small. Non-fuel mineral resources have a strikingly different relationship to transparency, a pattern that holds using the different estimation methods reported below.¹¹ The question arises why this is the case. Ross (2011) who also observed such behavior on the part of mineral resources has suggested several mechanisms for this behavior, the most prominent of which is the notion that unlike oil, which is in high demand and allows the governments of oil producing countries to be relatively immune to the need to borrow on international markets, non-fuel mineral resource producers must still rely on international capital markets and must be able to attract foreign investments into their respective non-fuel mineral industries. This requires them to be more transparent in the first place.

We now examine the impact of other variables (our controls) on transparency as reported in Tables 1a through 1d. Education in the form of secondary schooling positively and significantly influences transparency though the effect is not very large (small coefficients) and varies across the four tables, showing up only for autocracies when non-fuel mineral resources are the resources of interest (Tables 1c and 1d) but for all cases when oil is the resource of interest. In general, the results are consistent with the notion that more educated citizens are more likely to recognize inadequacy in government reporting and demand greater transparency.

Incremental democratizing changes in governments as measured by Polity2 are also highly significant and positive in their effect on transparency. While this is expected, its presence does reduce the coefficient of oil or mineral resources.

Also noteworthy is the fact that in all four tables, 1a through 1d, a rise in the level of *government consumption as a share of GDP* indicating an increase in the relative size of the government, adversely and significantly influences transparency in the full sample, and this effect seems to be driven only by democracies since it is not present among autocracies. The presence of a negative coefficient in general is consistent with one part of the discussion in section 2.5 regarding the role of bureaucracy in hindering information dissemination. However, the fact that this coefficient shows up only for democracies is surprising and contrary to the second part of the discussion in section 2.5, where large governments in countries with weaker institutions were expected to exert greater influence on the economy and society, including greater arbitrariness in the dissemination of information. In fact, we find the reverse to be true. This might suggest that this effect may in fact indicate that large governments are poorer disseminators of information, rather than them being intentionally withholding information.

Does the presence of oil resources play any role in the government size as was suggested in section 2.5? In Tables 1a and 1b, the presence of the *government consumption per GDP* variable

¹¹ Although a positive and significant effect was observed for oil value per capita (Table 1b) that effect was ten times smaller and held only among democracies. In the case of mineral value per capita, the positive effect is much larger (even though small in absolute terms) and holds across different specification.

reduces the adverse effect of oil on transparency (compare columns 1 and 2, and also 4 and 5 in both tables¹²). This does suggest that there is indeed an effect of oil resources on government size, or at least on the consumption level (note that this effect holds only in democracies where the government variable was significant in the first place). What about non-fuel minerals? Here, only Table 1c is relevant since results in Table 1d were discounted due to a simultaneity bias. But Table 1c shows no significant influence of the minerals variable. Thus, the question of their role in government size is mute.

There is also some evidence (Tables 1a, 1c and 1d) that richer democracies are more transparent. Surprisingly, no such effect is found among autocracies. When one considers, for example, rich economies of the Middle East that remain authoritarian this finding appears reasonable.

Finally, but not surprisingly, the effect of democratization on transparency, as measured by Polity2, is positive across all four tables and among both already democratic and authoritarian states. The fact that this variable still performs well suggests that governments can still improve transparency by marginal improvements to their executive authority, whether they govern in countries that are already democratic or autocratic.

3.2 Pooled 5-year average regressions

We now take advantage of the time dimension and the dynamic effects. We begin with simple OLS pooled analysis and later move on to panel analysis. To smooth over idiosyncratic fluctuations we average all variables over five years. All regressors are lagged by one 5-year period. Results, corrected for error clustering and heteroskedasticity, are reported in Tables 2a and 2b. In the case of *oil value per GDP* (Table 2a) the pooled OLS estimates for the full sample as well as for the autocracy-only sample both indicate a negative and significant coefficient as was the case for the cross sectional estimates. Thus, as in the cross-sectional estimate, the democratic group experiences little significant adverse effects from oil rents on transparency.

Comparing Table 2a with Table 1a, one might note that the pooled results do exhibit tighter confidence bands than did the cross-sectional results, even though the size of the coefficients are similar in the two estimates. Two differences between the two results are (a) that in autocracies with inclusion of all regressors (last column) we now have a highly significant and adverse oil effect, which we did not have before, and (b) in no case does the adverse oil effect now show up in democracies whereas previously, column 4 of Table 1a indicated an adverse effect. Thus, introducing the element of time in this simple pooled estimation, where no account of fixed effects are made, yields more precise results and once again confirms the adverse role of oil resources in transparency. Among other controls, schooling continues to be a crucial variable in influencing democracy, as it was before. However, government size now has a negative coefficient for both democracies *and* autocracies, whereas previously the effect was limited to democracies only. It thus appears that *over time*, larger governments may have played a greater role in suppressing information among autocracies than would appear if one were to average over the entire 40-year span as one does in cross sectional estimates.

Finally, as before, Polity2 exhibits strong transparency inducing properties, but the size of the effect is somewhat smaller even if the precision is greater (smaller standard errors). Replacing oil value as a share of national income with oil value per capita, Table 2b reports results that are generally weaker than 2a, as with its cross sectional counterpart Table 1b compared to Table 1a.

¹² In table 1b the effect changes from insignificant in column 4 to positive in column 5, but the direction is the same as in other cases.

But one fact that does emerge is the greater distinction now between a positive, larger and more significant effect of *oil per capita* on transparency among democracies and a negative role among autocracies. While the significance of the latter is somewhat limited (at 10% level and only in two of the three columns), its performance is enhanced compared to the cross sectional Table (1b). Thus, in general, the cross sectional finding that the ‘curse’ is strongly exhibited among authoritarian states, when oil is measured relative to GDP not per capita, remains valid for pooled estimates as well. But in the pooled estimates the role of oil per capita among democracies is actually positive.

While in cross sectional results only richer countries were more transparent, when we introduce time in the pooled estimates we observe that becoming richer positively influences transparency even among autocracies. This is possible if the authoritarian but rich countries have become more transparent over time.

How do these results hold up when we replace oil with mineral resources?

The element of time implies some differences in the results of mineral resources compared to the cross sectional results. Most noteworthy are two differences. First, mineral resources when measured as a fraction of GDP now exhibit some adverse effect on transparency among democracies (column 6 in Table 2c versus Table 1c). Secondly, as in Tables 2a and 2b countries that are richer now exhibit greater transparency even among autocracies.

When replacing mineral rent per GDP with mineral rent per capita (Table 2d), the same anomaly emerges as in the cross sectional case, namely a positive effect on both democracies and autocracies at least in some of the columns; this effect vanishes in the panel regressions below. Thus, it remains an open question whether there really is a phenomenon to explain here, or whether our results are a function of econometric limitations.

3.3 Panel fixed effects estimates for the 5-year averages

The main contribution of our paper comes from its panel data estimates (Tables 3a through 3d) using the newly developed measure of transparency. The estimates that are reported consider both country and time fixed effects. As always, introducing country fixed effects removes unobserved country heterogeneity. Introducing time fixed effects is based on the stylized fact that oil is especially susceptible to price booms and busts. These have a large impact on oil prices, thus affecting *all* oil-producing countries at the same time. As before, all regressors are lagged by one 5-year period. The estimations are also based on robust errors and thus correct for the within-country error clustering and heteroscedasticity.

Table 3a, which *uses oil value per GDP*, indicates a negative and significant effect of oil rents on transparency among autocracies but not democracies. Even so, the negative (but insignificant) coefficient of this variable among democracies is sufficient to make the full sample indicate a stronger adverse effect of oil on transparency, both in size and in statistical significance, confirming results from our previous methods. Among other variables, per capita income performs similar to previous results, in that richer countries do better in terms of transparency, but this time only among autocracies. On the contrary, incremental democratic improvements in executive institutions (Polity2) matter only among democracies, not autocracies. Finally, government consumption per capita is now only marginally significant among democracies and no longer among autocracies. Most surprisingly, the effect of schooling on transparency is entirely eliminated. Clearly, removing unobserved country and time effects dilutes the results of

government size and schooling. While this dilution does not eliminate government size effect fully, it does eliminate the effect of schooling entirely.

As before, using *oil value per capita* measure shows no oil effects. The adverse effect of oil on transparency shows up only when oil is measured as a share of GDP. Polity2 and GDP per capita have a similar effect as in Table 3a, while schooling and government remain generally insignificant. The R^2 in both tables are significantly higher than before (43% and 42% compared to 32% and 29% in pooled estimations and 33% and 34% in cross sectional estimations). Thus, the panel estimations enjoy a greater overall predictive power. Given this fact, the addition of a time dimension, and the removal of country and time specific effects, it may be safely argued that the panel estimation results provide superior estimates. Our results here confirm the adverse effect of oil dependence on transparency, but only among autocracies. This result is robust and survives various methods. Furthermore, even though some of our estimates (e.g. cross sectional) suggested oil might also have an adverse effect on transparency among democracies, this result did not persist in pooled or panel regressions and therefore was not robust. In fact, anecdotal evidence supports the non-universality of this adverse effect. The experience of countries such as Norway in being able to take advantage of their oil revenues without compromising transparency is suggestive of these findings.

How do mineral resources fare in a panel environment? Replacing oil values with mineral rents in their two forms (Tables 3c and 3d) produce similar results. First we now find that mineral resources have no effect on transparency in *both* tables. This result diverges from previous findings where mineral resources, if measured in per capita terms, produced positive coefficients. Given the superior estimates from a panel methodology, one may conclude that minerals have no effect on transparency - a result that is in contrast to one in Ross (2011) in this respect. The two Tables, 3c and 3d, are similar in other respects too. For example, per capita income matters among autocracies and Polity2 matters only among democracies.

3.4 Era regressions

Other studies suggest that the effects of oil wealth on political accountability have varied over time (Andersen and Ross 2014). To see if the effects of oil and mineral resources on transparency have also changed we estimate four separate cross sectional regressions, corresponding to four different eras in our sample: 1970-1979, 1980-1989, 1990-1999 and 2000-2009. We do *not* examine mineral rents per capita here. Thus, the results are reported for three measures: two measures of oil and one measure of mineral resources that have held promise in our preceding analysis. Results are reported in Tables 4a-1, 4b-1, and 4c-1 through 4a-4, 4b-4 and 4c-4. The letters a, b and c refer to the measure of resource used: oil value per GDP, oil value per capita and mineral resources per GDP; while the numbers after the dash refer to the four eras. First, comparing Tables 4a-1 through 4a-4, we find an intriguing result: from tables 4a-1 through 4a-4, the adverse effect of oil on transparency among autocracies was *not* present in the 1970s and 1980s, but only shows up — and strongly so — in the 1990s and the first decade of the 21st century. The effect on democracies seems to be in the reverse direction of its effect on autocracies, but not as strong. Thus, the effect in the 1970s and 1980's is positive (though significant only at 10%) and drops off to being insignificant in the 1990s and the first decade of the 21st century. Tables 4b-1 through 4b-4 reveal very little effect among autocracies when oil is measured per capita, but highly significant effect among democracies, again in the same direction of decreasing effect from the 1970s and 1980s to no effect in the 1990s and the first

decade of the 21st century. Finally, mineral resources do not exhibit a strong or consistent effect in general.

That the ‘curse’ should be present among autocracies only in the last two decades, and not before, is consistent with earlier studies, which emphasize the shift in control over petroleum rents from corporations to governments (Ross 2012, Andersen and Ross 2014).

3.5 Endogeneity, collinearity and simultaneity bias

There are several ways in which these results might be biased. The first is that one of our control variables, Polity2, is directly affected by both our independent variable (oil rents) and our dependent variable (transparency), producing collinearity vis-à-vis the first and endogeneity vis-à-vis the second. As for collinearity with oil rents, many studies report that oil rents tend to hinder democracy by making authoritarian governments more durable (Barro 1999, Ross 2001, Tsui 2010).¹³ As for endogeneity, disentangling the relation between transparency and democracy is not easy. For example, government transparency can be seen as a component of democracy and thus, the two may co-evolve. Or, it can be argued that transparency may even precede democracy as it contributes to democratic aspirations.¹⁴ All this would imply that our Polity2 control variable might be endogenous to our measure of transparency.

The potential negative collinearity of Polity2 with the oil variable suggests that the inclusion of the ‘democracy’ control should bias the size of coefficient on our oil variable downward, if at all, reducing its statistical significance, through a post-treatment bias. The fact that oil rents remain significantly associated with less transparency, even after accounting for the effects of oil rents on a country’s overall democracy level, should make our results more convincing.

The endogeneity problem is harder to address: using an exogenous instrument might help us fix the problem, but finding a valid instrument for oil abundance, or oil dependence, is challenging. Instead, we opt for next best thing by both including and excluding Polity2 from our regressions. Even though the inclusion of Polity2 in the cross-sectional estimations has a strong influence on the coefficient of the natural resource variables, that influence diminishes in the pooled and entirely goes away in the panel estimations, which we consider more credible.

Our measures of oil wealth might also be endogenous to transparency: a country’s *ex ante* transparency might affect the behavior of foreign investors, the size of investments in the oil sector, and ultimately the amount of petroleum that is discovered and extracted. Yet the available evidence suggests that countries with better investment conditions, including stronger democratic institutions, tend to find more petroleum wealth and extract it more quickly (Bohn and Deacon 2000, Poelhekke and van der Ploeg 2010, Metcalf and Wolfram 2014, Cotet and Tsui 2013). This implies that we should naively expect oil-rich countries to be more transparent than oil-poor countries, since they are able to attract more investment to their extractive industries. The endogeneity of oil wealth should thus not be a threat to our inferences; if anything, it suggests that the effects we report may be a lower bound estimate of the true impact it has on transparency.

¹³ Several studies have challenged these findings; see Haber and Menaldo 2010 and Wacziarg 2012. Ross 2014 provides a review of this debate.

¹⁴For example, the widespread usage of “transparency promoting” technologies has been attributed to the uprisings of the Arab Spring.

3.6 The MENA factor

The combination of two aspects of the Middle East's political economy - its singular dependence on oil, and its historically authoritarian character - renders the disentangling of the effects of oil on transparency both interesting and challenging at the same time. We address this problem by stratifying the sample into MENA and non-MENA groups. The cross sectional and pooled regressions are reported in Tables 5 and 6. Here, we have combined the four measures of resources into two single tables, one for cross sectional (Table 5) and the other for pooled regressions (Table 5). For the panel regressions, the tables are separated into three tables as usual (reporting two measures for oil value and one for mineral rent). These are Tables (7a) through (7c). But here we also report another set of three, labeled (8a) through (8c), with the single difference that Polity2 has been omitted from the regressions. The cross sectional and pooled tables also have columns in which Polity2 is excluded from the regression. The reason for this in all cases is, as previously explained, that in the absence of a suitable instrument for Polity2, we opt for the next best thing (i.e. to report the results with and without the Polity2 variable to gauge the robustness of our findings).

What we find is that among the MENA group, the negative effect of oil rents on transparency is exacerbated, with the effect sometimes more pronounced under one or the other measure of oil value and other times under both measures. More specifically, the cross-sectional regressions indicate a negative effect of oil on transparency in MENA countries under oil value per GDP but *not* under oil value per capita, while the pooled regressions indicate the negative effect to hold in the case of *both* measures. Importantly, however, the coefficients remain significant and highly stable both across regression types and with and without the inclusion of the Polity2 variable: for oil value per GDP, these coefficients are -.30 and -.38 in cross sectional regressions, and -.31 and -.34 in pooled regressions; for oil value per capita, they are -.010 and -.015 in the pooled regressions. This not only indicates the robustness of this particular result, but also that any potential endogeneity of Polity2, should it exist, does not affect the coefficient of interest.

How do these results hold up in the panel regressions? In these regressions it is oil value per capita that shows greatest robustness of the negative MENA effect, regardless of model variations such as how time is treated (as in inclusion or exclusion of time-fixed effects, versus inclusion or exclusion of an ordinal index of time) or whether Polity2 is included or excluded. The coefficient value is highly stable at around -.04 unless time fixed effects are incorporated, in which case it falls to about -.02 (again, results are impervious to the inclusion or exclusion of Polity2). In the case of the oil value per GDP, while the results confirm the same negative and significant MENA effect and are similarly stable, when time fixed effects are included the results lose significance. Two observations are worth noting here. The coefficient size, where significant, remains remarkably similar to the size for the same measure under cross sectional and pooled regression (around -.30 to -.33); even when varying in significance, the coefficients vary by little (from 0 to -.02).

Why does the MENA group exhibit this additional adverse effect of oil on transparency above and beyond the world on average? It cannot be because the MENA region has a high concentration of authoritarian governments: if this were true, the inclusion of the Polity2 variable would cause the oil measure to lose significance, yet it does not. Perhaps it is because the MENA autocracies have other distinctive characteristics that are not captured by either the dichotomous 'democracy-autocracy' measure or the continuous Polity2 measure. Some political scientists argue that there are three types of authoritarian governments: personalistic regimes,

military regimes, and one-party regimes (Wright, Franz, and Geddes 2014). The MENA region includes a unique concentration of monarchies, which are usually treated as a type of personalistic regime and during the period we analyze many of the republics were also under some form of personalistic rule. Although this question goes beyond the scope of our analysis, we suspect that personalistic regimes, including monarchies, are atypically opaque and that this accounts for the ‘MENA effect’ we observe in our estimations.¹⁵

As best we can tell, there is nothing about the history or culture of the MENA region itself that is transparency-reducing. In Table 9 we return to our full sample and introduce a MENA dummy variable, as well as terms interacting MENA with oil dependence, Polity2, and both oil and Polity2 simultaneously. The inclusion of the dummy variable restricts our analysis to the pooled regressions. In columns one through four, oil dependence retains a strong adverse effect, while neither the MENA dummy nor the interaction terms are significantly negative. In columns 5 through 8 we add Polity2 to the models to control for the undemocratic features of the MENA governments. This causes the MENA dummy to become significantly positive, implying that if the transparency-reducing effects of oil and authoritarianism could be removed from the region the governments would be more transparent than the sample mean^{16, 17}.

4. Conclusion

A country’s dependence on oil resources is often strongly and significantly associated with less transparency among autocracies when transparency is measured by the quantity of data that the government reports to the World Bank and IMF. This single finding is generally robust to the use of cross country, pooled, and panel regressions. The transparency-inhibiting effects of oil only emerge when countries are economically dependent on oil rents; an alternative per-capita measure of oil wealth is not robustly linked to less transparency in either autocracies or democracies. We interpret this as good news: when a country can maintain a large non-oil sector, a petroleum discovery should not crowd out transparency.

Non-fuel mineral rents appear to have no consistent relationship with transparency. We do not attempt to explain the different effects of fuel and non-fuel minerals; still, it may be significant that resource-rich countries are much more likely to be dependent on oil rents than on non-fuel mineral rents, which could account for this difference.

The adverse effects of petroleum dependence are not apparent in the 1970s or 1980s, yet emerge strongly in the 1990s and 2000s. This pattern is consistent with findings reported by Ross (2012) and Andersen and Ross (2014), suggesting that the political resource curse is a relatively recent phenomena and only began after the completion of the oil nationalizations of the 1970s. A closer exploration of this temporal pattern would be a valuable topic for future research.

The precise relationship between oil dependence and transparency in autocracies is challenging to identify, since oil wealth also appears to stabilize autocratic regimes and help them ward off democratizing pressures. Perhaps, the transparency-reducing effects of oil can help explain why oil-funded autocracies are so durable. Still, while autocratic stability is linked to both oil

¹⁵ We thank a reviewer for suggesting this possibility.

¹⁶ We must be cautious about this inference, since it depends on claims about counterfactuals – MENA-like states that are neither oil-rich nor authoritarian – that are not observed in our data (King and Zheng 2006).

¹⁷ For brevity, we report these results only for oil value as a share of GDP. Oil value per capita produced similar results, but, as always, the oil effect is not as significant.

abundance and oil dependence, opacity is only associated with oil dependence – suggesting a more nuanced, conditional relationship.

It is interesting to note that the asymmetric response of transparency to oil rents among democracies and autocracies that we have found here echoes other asymmetric patterns observed in the literature. For example, Mohtadi and Roe (2003) have found that the effect of democratization on corruption (a particularly high correlate of opacity) among countries in their early stages of democratization is different from those that are already somewhat democratized (mid stages of democratization).¹⁸ Possible lessons drawn from such parallels may be subject to future research.

Our findings regarding the MENA group are of significance. We find that being a MENA member country does exacerbate the negative effect of oil on transparency. But we also find that if we control for both the adverse effects of oil dependence and the adverse effects of autocratic rule the MENA countries cease to be less transparent than the rest of the world. This bodes well for the potential for reform in the MENA region. At the same time, it raises questions about the resistance to reform that might occur in the oil producing MENA countries. Hence the famous question attributed to the Roman poet Juvenal: “But Who Will Guard the Guardians?”¹⁹

¹⁸In particular, as in here, they find that among the relatively authoritarian countries, greater democratization is associated with *greater* corruption (not less), but in countries already somewhat democratized, further democratization is associated with less corruption.

¹⁹This saying is also the title of a thought provoking piece by the late Leo Hurwicz (2008), the Nobel laureate in economics. In a similar vein, Mohtadi, Polasky and Roe (2014) find that when the closeness of an economy to world trade feeds the corruption of high officials (as in skimming from tariff rents), such officials will resist free trade and openness of the economy. Of significance to that finding is that the size of trade rents must be very high for such resistance to persist.

References

- Alexeev, M., and R. Conrad (2009). The elusive curse of oil. *The Review of Economics and Statistics*, 91(3):586-598.
- Andersen J.J., and M.L. Ross (2014). The big oil change: a closer look at the Haber-Menaldo analysis, *Comparative Political Studies* 47(7): 933-1021.
- Barro, Robert J. (1999). Determinants of Democracy. *Journal of Political Economy* 107(6):S158–S183.
- Bohn H. and R.T. Deacon (2000). Ownership risk, investment, and the use of natural resources. *American Economic Review* 90(3):526—49.
- Cheibub, J. A., J. Gandhi and J.R. Vreeland (2010). Democracy and dictatorship revisited. *Public Choice*, 143(1):67-101.
- Cotet A. and K.K. Tsui (2013). Oil and Conflict: What Does the Cross Country Evidence Really Show? *American Economic Journal: Macroeconomics* 5(1):49—80.
- Easterly, W. and R. Levine (2002). Tropics, Germs and Crops: How Endowments Influence Economic Development. NBER Working Papers 9106, National Bureau of Economic Research, Inc.
- Easterly, William (2005). National Policies and Economic Growth. In P. Aghion and S. Durlauf, eds., *Handbook of Economic Growth*, vol. 1A, North-Holland, Amsterdam.
- Egorov, G., S. Guriev and K. Sonin (2009). Why Resource-Poor Dictators Allow Freer Media: A Theory and Evidence from Panel Data. *American Political Science Review*, 103(4):645.
- Elbadawi, I. and A. Gelb (2010). Oil, Economic Diversification and Development in the Arab World. Economic Research Forum Policy Research Report 35.
- Frankel, Jeffrey A. (2010). The natural resource curse: a survey. NBER Working Papers 15836, National Bureau of Economic Research, Inc.
- Haber, S. and V. Menaldo (2011). Do Natural Resources Fuel Authoritarianism? A Reappraisal of the Resource Curse. *The American Political Science Review* 105(1):1–24.
- Hollyer, J., P. Rosendorff and J. R. Vreeland (2014). Measuring Transparency. *Political Analysis* 22:413-434.
- Hurwicz, Leonid (2008). But Who Will Guard the Guardians? *The American Economic Review* 98: 577-585.
- International Budget Partnership (2008). Open Budget Survey. Washington D.C.: International Budget Partnership.
- King, G. and L. Zheng (2006). The Danger of Extreme Counterfactuals. *Political Analysis* 14:131- 159.
- Mehlum, H., K. Moene and R. Torvik (2006). Institutions and the Resource Curse. *The Economic Journal*, 116:1–20.
- Metcalf G. and C. Wolfram (2014). Cursed Resources? Political Conditions and Oil Market Volatility. *The Energy Journal*, forthcoming.

- Mohtadi, H. and T. Roe (2003). Democracy, Rent Seeking, Public Goods and Economic Growth. *Journal of Public Economics* 87: 445-466 .
- Mohtadi, H. and S.Ruediger (2012). Financial Cascades in the MENA Region: Theory, Empirics and Policy. Economic Research Forum Working Paper No. 718.
- Mohtadi, H.,S.Polasky and T..Roe (2014). Trade, Transparency and Corruption: A Signaling Game. Working Paper, University of Wisconsin-Milwaukee and University of Minnesota.
- Polity IV Project: Political Regime Characteristics and Transitions, 1800-2011, <http://www.systemicpeace.org/polity/polity4.htm>
- Poelhekke S. and F. van der Ploeg (2013).Do natural resources attract FDI? *Review of Economics and Statistics*. 95(3): 1047-1065.
- Rodrik, D., A. Subramanian and F. Trebbi (2004). The Primacy of Institutions over Integration and Geography in Economic Development. *Journal of Economic Growth*. 9:134-165.
- Ross, Michael (1999). The Political Economy of the Resource Curse. *World politics*, 51:297-322.
- Ross Michael (2001). Does Oil Hinder Democracy? *World Politcs*. 53(3):325—61.
- Ross, Michael (2004). Does Taxation Lead to Representation? *British Journal of Political Science* 34:229-249.
- Ross, Michael (2011). Mineral Wealth and Budget Transparency Working paper, UCLA, Department of Political Science.
- Ross, Michael(2012). *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations*. Princeton, NJ: Princeton Univ. Press.
- Ross, Michael (2014). What have we Learned about the Resource Curse? Working paper, UCLA Department of Political Science.
- Stevens, P., and E. Dietsche (2008). Resource curse: An analysis of Causes, Experiences and Possible Ways Forward. *Energy Policy*, 36(1):56-65.
- Tsui, K. K. (2010). Resource curse, Political Entry, and Deadweight Costs. *Economics & Politics*, 22(3):471-497.
- Van der Ploeg, Frederick. (2011). Natural resources: Curse or blessing? *Journal of Economic Literature* 49(2):366-420.
- Wacziarg, Romain (2012). The First Law of Petropolitics. *Economica* 79 (316):641-657.
- Wick, K., and E. Bulte (2009). The Curse of Natural Resources. *Annual Review of Resource Economics*, 1(1): 139-156.
- Williams, Andrew (2009). On the release of information by governments: Causes and Consequences. *Journal of Development Economics* 89(1):124-138.
- Williams, Andrew. (2011). Shining a Light on the Resource Curse: An Empirical Analysis of the Relationship between Natural Resources, Transparency, and Economic Growth. *World Development* 39(4):490-505.
- World Bank (2012). World Development Indicators. Washington: World Bank.

Wright, J. Franz, E and B. Geddes (2014). Oil and Autocratic Regime Survival. *British Journal of Political Science* (forthcoming).

Tables 1 a-d: OLS

Table 1a: Oil Value Per GDP and Transparency (OLS cross section 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per gdp)	-0.2887*** (0.0415)	-0.2256*** (0.0656)	-0.0383 (0.0541)	-0.2292*** (0.0599)	0.1718 (0.1224)	0.1986 (0.1218)	-0.2272*** (0.0813)	-0.1996** (0.0851)	-0.1056 (0.0834)
log(gdp per capita)	0.0162* (0.0094)	0.0155 (0.0098)	0.0097 (0.0088)	0.0204 (0.0137)	0.0226* (0.0134)	0.0112 (0.0127)	0.0044 (0.0138)	0.0055 (0.0152)	0.0102 (0.0155)
sec school enroll	0.0022*** (0.0004)	0.0023*** (0.0004)	0.0017*** (0.0004)	0.0012* (0.0007)	0.0017*** (0.0006)	0.0017*** (0.0006)	0.0022*** (0.0006)	0.0021*** (0.0006)	0.0018*** (0.0005)
govt cons per gdp		-0.0015 (0.0011)	-0.0035*** (0.0008)		-0.0055*** (0.0015)	-0.0064*** (0.0015)		-0.0020 (0.0020)	-0.0018 (0.0018)
polity2			0.0089*** (0.0016)			0.0084** (0.0034)			0.0069** (0.0030)
Constant	0.2628*** (0.0529)	0.2856*** (0.0537)	0.3760*** (0.0511)	0.3208*** (0.0823)	0.3525*** (0.0778)	0.4162*** (0.0720)	0.3209*** (0.0782)	0.3433*** (0.0809)	0.3367*** (0.0803)
R2	0.521	0.521	0.632	0.399	0.478	0.607	0.267	0.266	0.327
N	160	159	152	77	77	72	83	82	80

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 1b: Oil Value PC and Transparency (OLS cross section 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per capita)	-0.0071* (0.0039)	-0.0049 (0.0037)	0.0071** (0.0035)	0.0044 (0.0063)	0.0100** (0.0040)	0.0093** (0.0040)	-0.0012 (0.0062)	-0.0006 (0.0063)	0.0110 (0.0083)
log(gdp per capita)	0.0151 (0.0102)	0.0151 (0.0101)	0.0014 (0.0093)	0.0236 (0.0156)	0.0183 (0.0126)	0.0057 (0.0120)	-0.0100 (0.0150)	-0.0073 (0.0166)	-0.0129 (0.0179)
sec school enroll	0.0024*** (0.0005)	0.0025*** (0.0005)	0.0017*** (0.0004)	0.0012* (0.0007)	0.0015** (0.0006)	0.0016** (0.0006)	0.0023*** (0.0006)	0.0023*** (0.0006)	0.0017*** (0.0006)
govt cons per gdp		-0.0034*** (0.0006)	-0.0041*** (0.0005)		-0.0042*** (0.0004)	-0.0048*** (0.0005)		-0.0021 (0.0020)	-0.0009 (0.0019)
polity2			0.0110*** (0.0017)			0.0087** (0.0035)			0.0107*** (0.0034)
Constant	0.2559*** (0.0574)	0.3045*** (0.0570)	0.4323*** (0.0540)	0.2764*** (0.0985)	0.3629*** (0.0750)	0.4321*** (0.0690)	0.3982*** (0.0861)	0.4152*** (0.0890)	0.4670*** (0.0958)
R2	0.449	0.492	0.641	0.326	0.501	0.621	0.217	0.231	0.340
N	160	159	152	77	77	72	83	82	80

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 1c: Mineral Rents Per GDP and Transparency (OLS cross section 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(mineral rent per gdp)	0.0166 (0.0163)	0.0072 (0.0144)	-0.0118 (0.0128)	0.0141 (0.0239)	-0.0037 (0.0164)	-0.0297* (0.0165)	0.0164 (0.0251)	0.0116 (0.0245)	-0.0034 (0.0215)
log(gdp per capita)	0.0291** (0.0137)	0.0224* (0.0119)	0.0089 (0.0088)	0.0595** (0.0234)	0.0370** (0.0155)	0.0080 (0.0114)	-0.0055 (0.0118)	-0.0033 (0.0137)	0.0034 (0.0131)
sec school enroll	0.0012* (0.0007)	0.0018*** (0.0005)	0.0017*** (0.0004)	-0.0001 (0.0012)	0.0007 (0.0008)	0.0015** (0.0006)	0.0016*** (0.0006)	0.0019*** (0.0006)	0.0019*** (0.0005)
govt cons per gdp		-0.0048*** (0.0014)	-0.0039*** (0.0004)		-0.0052*** (0.0017)	-0.0043*** (0.0003)		-0.0023 (0.0020)	-0.0018 (0.0018)
polity2			0.0091*** (0.0015)			0.0073** (0.0033)			0.0082*** (0.0030)
Constant	0.1738** (0.0744)	0.2874*** (0.0630)	0.3922*** (0.0515)	0.0399 (0.1398)	0.2764*** (0.0880)	0.4438*** (0.0675)	0.3783*** (0.0684)	0.3971*** (0.0729)	0.3789*** (0.0689)
R2	0.276	0.407	0.625	0.250	0.433	0.615	0.136	0.190	0.319
N	177	172	154	88	86	72	86	83	80

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 1d: Mineral Rents Per Capita and Transparency (OLS cross section 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(mineral rent per capita)	0.0160*** (0.0034)	0.0118*** (0.0029)	0.0038 (0.0025)	0.0131*** (0.0043)	0.0077** (0.0035)	-0.0015 (0.0029)	0.0178*** (0.0050)	0.0156*** (0.0049)	0.0108** (0.0051)
log(gdp per capita)	0.0313** (0.0123)	0.0251** (0.0110)	0.0115 (0.0088)	0.0565** (0.0215)	0.0377** (0.0157)	0.0101 (0.0126)	0.0020 (0.0104)	0.0032 (0.0118)	0.0067 (0.0123)
sec school enroll	0.0009 (0.0006)	0.0015*** (0.0005)	0.0016*** (0.0004)	-0.0001 (0.0011)	0.0007 (0.0008)	0.0015** (0.0006)	0.0011* (0.0006)	0.0013** (0.0006)	0.0015** (0.0006)
govt cons per gdp		-0.0043*** (0.0013)	-0.0038*** (0.0005)		-0.0049*** (0.0017)	-0.0044*** (0.0005)		-0.0020 (0.0018)	-0.0018 (0.0017)
polity2			0.0088*** (0.0014)			0.0080** (0.0035)			0.0057* (0.0030)
Constant	0.1317* (0.0680)	0.2404*** (0.0596)	0.3605*** (0.0503)	0.0236 (0.1275)	0.2383*** (0.0900)	0.4173*** (0.0707)	0.3073*** (0.0616)	0.3312*** (0.0657)	0.3314*** (0.0650)
R2	0.375	0.465	0.629	0.323	0.463	0.593	0.303	0.321	0.375
N	177	172	154	88	86	72	86	83	80

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Tables 2a-d: Pooled OLS

Table 2a: Oil Value Per GDP and Transparency (pooled OLS 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(oil value per gdp)	-0.2711*** (0.0373)	-0.2422*** (0.0441)	-0.1136*** (0.0437)	0.0264 (0.1137)	0.1011 (0.0879)	0.0524 (0.0669)	-0.2231*** (0.0401)	-0.2448*** (0.0494)	-0.2069*** (0.0511)
L.log(gdp per capita)	0.0156*** (0.0046)	0.0222*** (0.0046)	0.0195*** (0.0044)	0.0066 (0.0060)	0.0087 (0.0059)	0.0027 (0.0058)	0.0121* (0.0069)	0.0270*** (0.0067)	0.0372*** (0.0062)
L.sec school enroll	0.0020*** (0.0002)	0.0020*** (0.0002)	0.0016*** (0.0002)	0.0021*** (0.0003)	0.0022*** (0.0003)	0.0021*** (0.0003)	0.0016*** (0.0003)	0.0014*** (0.0003)	0.0012*** (0.0003)
L.govt cons per gdp		-0.0037*** (0.0006)	-0.0039*** (0.0005)		-0.0037*** (0.0005)	-0.0041*** (0.0005)		-0.0035*** (0.0008)	-0.0039*** (0.0007)
L.polity2			0.0052*** (0.0006)			0.0069*** (0.0015)			0.0029*** (0.0011)
Constant	0.3049*** (0.0262)	0.3206*** (0.0254)	0.3582*** (0.0249)	0.3961*** (0.0352)	0.4278*** (0.0341)	0.4610*** (0.0328)	0.3214*** (0.0407)	0.2879*** (0.0386)	0.2420*** (0.0363)
R2	0.431	0.471	0.575	0.323	0.361	0.503	0.194	0.256	0.323
N	844	814	770	430	421	388	413	392	382

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 2b: Oil Value PC and Transparency (pooled OLS 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(oil value per capita)	-0.0035* (0.0019)	-0.0022 (0.0019)	0.0031* (0.0017)	0.0089*** (0.0022)	0.0090*** (0.0021)	0.0066*** (0.0019)	-0.0045* (0.0026)	-0.0052* (0.0027)	-0.0023 (0.0029)
L.log(gdp per capita)	0.0123** (0.0048)	0.0191*** (0.0048)	0.0140*** (0.0045)	0.0040 (0.0059)	0.0062 (0.0058)	0.0003 (0.0058)	0.0066 (0.0071)	0.0204*** (0.0075)	0.0283*** (0.0070)
L.sec school enroll	0.0023*** (0.0002)	0.0022*** (0.0002)	0.0016*** (0.0002)	0.0020*** (0.0003)	0.0022*** (0.0003)	0.0021*** (0.0003)	0.0017*** (0.0003)	0.0015*** (0.0003)	0.0013*** (0.0003)
L.govt cons per gdp		-0.0040*** (0.0006)	-0.0039*** (0.0004)		-0.0035*** (0.0005)	-0.0040*** (0.0005)		-0.0038*** (0.0008)	-0.0040*** (0.0007)
L.polity2			0.0062*** (0.0006)			0.0069*** (0.0015)			0.0036*** (0.0011)
Constant	0.3123*** (0.0275)	0.3323*** (0.0265)	0.3874*** (0.0255)	0.4058*** (0.0350)	0.4380*** (0.0337)	0.4711*** (0.0326)	0.3487*** (0.0418)	0.3258*** (0.0417)	0.2945*** (0.0397)
R2	0.392	0.442	0.572	0.346	0.383	0.516	0.145	0.208	0.290
N	846	815	770	430	421	388	415	393	382

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 2c: Mineral Rents Per GDP and Transparency (pooled OLS 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(mineral rent per gdp)	-0.0043 (0.0067)	-0.0055 (0.0062)	-0.0168*** (0.0060)	0.0051 (0.0100)	-0.0000 (0.0078)	-0.0247*** (0.0068)	-0.0031 (0.0087)	-0.0049 (0.0083)	-0.0126 (0.0082)
L.log(gdp per capita)	0.0166*** (0.0051)	0.0209*** (0.0050)	0.0154*** (0.0043)	0.0184** (0.0072)	0.0167** (0.0066)	0.0012 (0.0057)	0.0022 (0.0064)	0.0151** (0.0074)	0.0248*** (0.0066)
L.sec school enroll	0.0017*** (0.0002)	0.0018*** (0.0002)	0.0017*** (0.0002)	0.0018*** (0.0004)	0.0020*** (0.0003)	0.0021*** (0.0003)	0.0011*** (0.0003)	0.0012*** (0.0003)	0.0013*** (0.0003)
L.govt cons per gdp		-0.0043*** (0.0006)	-0.0038*** (0.0004)		-0.0049*** (0.0010)	-0.0039*** (0.0004)		-0.0034*** (0.0008)	-0.0037*** (0.0008)
L.polity2			0.0057*** (0.0006)			0.0065*** (0.0014)			0.0039*** (0.0011)
Constant	0.2855*** (0.0295)	0.3267*** (0.0273)	0.3855*** (0.0248)	0.2921*** (0.0442)	0.3828*** (0.0378)	0.4805*** (0.0336)	0.3876*** (0.0381)	0.3573*** (0.0400)	0.3173*** (0.0362)
R2	0.281	0.378	0.575	0.258	0.341	0.512	0.069	0.167	0.294
N	918	869	771	478	461	388	431	399	382

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 2d: Mineral Rents PC and Transparency (pooled OLS 1970-2010)

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(mineral rent per capita)	0.0110*** (0.0014)	0.0080*** (0.0013)	0.0015 (0.0012)	0.0127*** (0.0019)	0.0100*** (0.0017)	0.0013 (0.0015)	0.0100*** (0.0020)	0.0069*** (0.0020)	0.0023 (0.0019)
L.log(gdp per capita)	0.0178*** (0.0049)	0.0216*** (0.0048)	0.0164*** (0.0043)	0.0187*** (0.0068)	0.0173*** (0.0063)	0.0028 (0.0058)	0.0023 (0.0059)	0.0140** (0.0071)	0.0244*** (0.0067)
L.sec school enroll	0.0016*** (0.0002)	0.0018*** (0.0002)	0.0016*** (0.0002)	0.0016*** (0.0003)	0.0018*** (0.0003)	0.0020*** (0.0003)	0.0009*** (0.0003)	0.0011*** (0.0003)	0.0013*** (0.0003)
L.govt cons per gdp		-0.0042*** (0.0006)	-0.0039*** (0.0005)		-0.0046*** (0.0009)	-0.0040*** (0.0005)		-0.0034*** (0.0008)	-0.0038*** (0.0008)
L.polity2			0.0059*** (0.0006)			0.0070*** (0.0015)			0.0037*** (0.0011)
Constant	0.2507*** (0.0283)	0.2982*** (0.0266)	0.3709*** (0.0243)	0.2634*** (0.0416)	0.3507*** (0.0366)	0.4577*** (0.0325)	0.3623*** (0.0356)	0.3461*** (0.0380)	0.3109*** (0.0358)
R2	0.329	0.406	0.571	0.326	0.389	0.503	0.131	0.196	0.292
N	918	869	771	478	461	388	431	399	382

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Tables 3 a-d: Panel Regressions

Table 3a: Oil Value Per GDP and Transparency (5 year panel 1970-2010) – Country and Time Fixed Effects

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(oil value per gdp)	-0.1903*** (0.0705)	-0.1705** (0.0757)	-0.1838** (0.0780)	-0.2650 (0.2458)	-0.2053 (0.2370)	-0.1980 (0.2063)	-0.1703** (0.0679)	-0.1418* (0.0766)	-0.1403* (0.0812)
L.log(gdp per capita)	0.0453*** (0.0125)	0.0377*** (0.0139)	0.0480*** (0.0137)	-0.0064 (0.0336)	-0.0097 (0.0356)	0.0009 (0.0399)	0.0586*** (0.0133)	0.0574*** (0.0169)	0.0638*** (0.0164)
L.sec school enroll	-0.0002 (0.0004)	-0.0003 (0.0004)	-0.0002 (0.0004)	-0.0004 (0.0005)	-0.0005 (0.0006)	-0.0003 (0.0005)	0.0000 (0.0006)	-0.0000 (0.0006)	0.0001 (0.0006)
L.govt cons per gdp		0.0011 (0.0009)	0.0005 (0.0008)		-0.0020 (0.0016)	-0.0028* (0.0014)		0.0015* (0.0008)	0.0013 (0.0009)
L.polity2			0.0045*** (0.0009)			0.0051*** (0.0010)			0.0016 (0.0016)
Constant	0.2419** (0.0947)	0.2917*** (0.1067)	0.1967* (0.1034)	0.6422** (0.2735)	0.7054** (0.2928)	0.6048* (0.3251)	0.0937 (0.0930)	0.0846 (0.1114)	0.0398 (0.1037)
R2	0.307	0.304	0.348	0.254	0.247	0.315	0.406	0.424	0.432
# of observations	844	814	770	430	421	388	413	392	382
# of countries	158	155	148	102	101	95	106	102	101

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 3b: Oil Value PC and Transparency (5 year panel 1970-2010) – Country And Time Fixed Effects

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(oil value per capita)	-0.0013 (0.0048)	-0.0005 (0.0046)	-0.0002 (0.0049)	-0.0016 (0.0053)	-0.0009 (0.0052)	0.0022 (0.0057)	-0.0033 (0.0075)	-0.0022 (0.0070)	-0.0052 (0.0065)
L.log(gdp per capita)	0.0412*** (0.0134)	0.0313** (0.0144)	0.0433*** (0.0148)	-0.0078 (0.0340)	-0.0119 (0.0357)	-0.0022 (0.0404)	0.0554*** (0.0151)	0.0495*** (0.0186)	0.0619*** (0.0183)
L.sec school enroll	-0.0001 (0.0004)	-0.0002 (0.0004)	0.0000 (0.0004)	-0.0004 (0.0005)	-0.0005 (0.0006)	-0.0003 (0.0005)	0.0002 (0.0006)	0.0001 (0.0006)	0.0004 (0.0006)
L.govt cons per gdp		0.0014 (0.0009)	0.0008 (0.0009)		-0.0019 (0.0016)	-0.0027* (0.0014)		0.0019** (0.0009)	0.0015 (0.0010)
L.polity2			0.0045*** (0.0009)			0.0051*** (0.0010)			0.0016 (0.0016)
Constant	0.2624** (0.1007)	0.3256*** (0.1099)	0.2097* (0.1092)	0.6508** (0.2757)	0.7202** (0.2932)	0.6252* (0.3287)	0.1021 (0.1031)	0.1214 (0.1210)	0.0382 (0.1126)
R2	0.300	0.298	0.340	0.250	0.244	0.313	0.390	0.410	0.425
# of observations	846	815	770	430	421	388	415	393	382
# of countries	158	155	148	102	101	95	106	102	101

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 3c: Mineral Rents Per GDP and Transparency (5 year panel 1970-2010) - Country And Time Fixed Effects

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(mineral rent per gdp)	0.0006 (0.0120)	-0.0009 (0.0125)	-0.0038 (0.0119)	-0.0321 (0.0300)	-0.0330 (0.0308)	-0.0227 (0.0278)	0.0060 (0.0120)	0.0060 (0.0123)	0.0011 (0.0122)
L.log(gdp per capita)	0.0410** (0.0164)	0.0322* (0.0171)	0.0440*** (0.0162)	-0.0023 (0.0423)	-0.0228 (0.0422)	0.0013 (0.0456)	0.0506*** (0.0187)	0.0487** (0.0200)	0.0566*** (0.0211)
L.sec school enroll	-0.0005 (0.0004)	-0.0004 (0.0004)	-0.0000 (0.0004)	-0.0010 (0.0006)	-0.0009 (0.0006)	-0.0003 (0.0006)	0.0002 (0.0006)	0.0003 (0.0007)	0.0004 (0.0007)
L.govt cons per gdp		0.0019** (0.0009)	0.0008 (0.0010)		-0.0008 (0.0016)	-0.0028* (0.0016)		0.0019* (0.0010)	0.0017 (0.0012)
L.polity2			0.0045*** (0.0010)			0.0050*** (0.0012)			0.0015 (0.0019)
Constant	0.2656** (0.1261)	0.3128** (0.1342)	0.2050* (0.1216)	0.6204* (0.3373)	0.8056** (0.3470)	0.6062 (0.3730)	0.1168 (0.1280)	0.1076 (0.1338)	0.0591 (0.1318)
R2	0.300	0.305	0.340	0.258	0.263	0.315	0.393	0.411	0.423
# of observations	918	869	771	478	461	388	431	399	382
# of countries	175	167	149	113	109	95	110	104	101

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 3d: Mineral Rents PC and Transparency (5 year panel 1970-2010) - Country and Time Fixed Effects

Dependent Variable: Transparency									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
L.log(mineral rent per capita)	0.0034 (0.0029)	0.0031 (0.0030)	0.0016 (0.0027)	0.0048 (0.0049)	0.0045 (0.0050)	0.0045 (0.0047)	0.0041 (0.0038)	0.0044 (0.0039)	0.0015 (0.0029)
L.log(gdp per capita)	0.0395*** (0.0144)	0.0307** (0.0153)	0.0421*** (0.0146)	-0.0035 (0.0368)	-0.0233 (0.0368)	-0.0007 (0.0390)	0.0491*** (0.0158)	0.0476*** (0.0173)	0.0560*** (0.0180)
L.sec school enroll	-0.0005 (0.0004)	-0.0004 (0.0004)	-0.0000 (0.0004)	-0.0010* (0.0005)	-0.0010* (0.0005)	-0.0004 (0.0005)	0.0002 (0.0005)	0.0003 (0.0006)	0.0004 (0.0006)
L.govt cons per gdp		0.0019** (0.0008)	0.0008 (0.0009)		-0.0006 (0.0015)	-0.0028* (0.0015)		0.0019** (0.0009)	0.0017* (0.0010)
L.polity2			0.0045*** (0.0009)			0.0051*** (0.0010)			0.0015 (0.0017)
Constant	0.2694** (0.1092)	0.3164*** (0.1185)	0.2138* (0.1085)	0.6111** (0.2921)	0.7882** (0.3040)	0.6013* (0.3202)	0.1187 (0.1067)	0.1058 (0.1132)	0.0599 (0.1128)
R2	0.303	0.308	0.341	0.259	0.263	0.319	0.398	0.417	0.424
# of observations	918	869	771	478	461	388	431	399	382
# of countries	175	167	149	113	109	95	110	104	101

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Tables 4a-c: Era Regressions

Table 4a-1: Era Regression 1970-1979 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per GDP	full sample			democracies	democracies	democracies	autocracies	autocracies	autocracies
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per gdp)	-0.1222 (0.1175)	-0.1156 (0.1328)	0.0213 (0.0966)	0.3859* (0.2049)	0.3620* (0.2111)	0.3529 (0.2543)	-0.1005 (0.0914)	-0.0829 (0.0952)	-0.1386 (0.0992)
log(gdp per capita)	0.0039 (0.0138)	0.0139 (0.0136)	0.0133 (0.0143)	-0.0163 (0.0278)	-0.0143 (0.0294)	-0.0272 (0.0309)	0.0093 (0.0163)	0.0266** (0.0127)	0.0297** (0.0124)
sec school enroll	0.0017** (0.0007)	0.0013* (0.0007)	0.0017** (0.0007)	0.0019 (0.0015)	0.0020 (0.0016)	0.0034* (0.0017)	0.0018** (0.0008)	0.0012* (0.0006)	0.0013** (0.0006)
govt cons per gdp		-0.0022* (0.0011)	-0.0033*** (0.0010)		-0.0017 (0.0021)	-0.0034 (0.0022)		-0.0025** (0.0012)	-0.0023** (0.0011)
polity2			0.0005 (0.0015)			-0.0020 (0.0066)			-0.0030* (0.0018)
Constant	0.4234*** (0.0785)	0.4010*** (0.0773)	0.4083*** (0.0829)	0.5941*** (0.1574)	0.6014*** (0.1641)	0.6859*** (0.1804)	0.3772*** (0.0942)	0.3141*** (0.0760)	0.2759*** (0.0778)
R2	0.291	0.313	0.443	0.144	0.154	0.359	0.242	0.354	0.375
N	103	99	94	35	35	31	67	63	63

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4b-1: Era Regression 1970-1979 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per Capita	full sample			democracies	democracies	democracies	autocracies	autocracies	autocracies
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per capita)	0.0046 (0.0056)	0.0055 (0.0060)	0.0090* (0.0047)	0.0234*** (0.0074)	0.0231*** (0.0077)	0.0200** (0.0085)	0.0006 (0.0056)	0.0019 (0.0053)	-0.0003 (0.0059)
log(gdp per capita)	-0.0092 (0.0141)	0.0015 (0.0141)	0.0054 (0.0141)	-0.0232 (0.0235)	-0.0213 (0.0247)	-0.0314 (0.0259)	0.0016 (0.0158)	0.0192 (0.0131)	0.0214 (0.0132)
sec school enroll	0.0023*** (0.0007)	0.0018*** (0.0006)	0.0018*** (0.0007)	0.0018 (0.0012)	0.0019 (0.0013)	0.0033** (0.0014)	0.0020*** (0.0007)	0.0014** (0.0006)	0.0015** (0.0006)
govt cons per gdp		-0.0022* (0.0012)	-0.0032*** (0.0010)		-0.0019 (0.0020)	-0.0033 (0.0020)		-0.0027** (0.0011)	-0.0027** (0.0011)
polity2			0.0012 (0.0014)			-0.0038 (0.0060)			-0.0021 (0.0019)
Constant	0.4896*** (0.0816)	0.4625*** (0.0798)	0.4530*** (0.0811)	0.6343*** (0.1345)	0.6439*** (0.1420)	0.7165*** (0.1555)	0.4184*** (0.0918)	0.3571*** (0.0773)	0.3317*** (0.0810)
R2	0.287	0.313	0.467	0.289	0.301	0.461	0.232	0.348	0.357
N	103	99	94	35	35	31	67	63	63

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4c-1: Era Regression 1970-1979 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Mineral Rent Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(mineral rent per gdp)	0.0012 (0.0148)	0.0063 (0.0155)	-0.0044 (0.0147)	-0.0029 (0.0347)	0.0200 (0.0397)	-0.0223 (0.0306)	-0.0002 (0.0166)	0.0019 (0.0169)	0.0019 (0.0168)
log(gdp per capita)	-0.0063 (0.0119)	0.0055 (0.0132)	0.0140 (0.0114)	0.0020 (0.0312)	0.0048 (0.0292)	-0.0184 (0.0306)	-0.0002 (0.0139)	0.0216* (0.0111)	0.0212* (0.0117)
sec school enroll	0.0021*** (0.0006)	0.0017*** (0.0006)	0.0017*** (0.0006)	0.0017 (0.0017)	0.0022 (0.0016)	0.0026 (0.0017)	0.0020*** (0.0007)	0.0014** (0.0006)	0.0015** (0.0006)
govt cons per gdp		-0.0031** (0.0015)	-0.0031*** (0.0010)		-0.0074** (0.0034)	-0.0029 (0.0019)		-0.0028** (0.0012)	-0.0028** (0.0011)
polity2									-0.0020 (0.0017)
Constant	0.4668*** (0.0719)	0.4451*** (0.0741)	0.4042*** (0.0670)	0.4294** (0.1899)	0.4985*** (0.1756)	0.6546*** (0.1823)	0.4291*** (0.0843)	0.3443*** (0.0669)	0.3331*** (0.0702)
R2	0.231	0.260	0.444	0.155	0.265	0.330	0.212	0.347	0.357
N	109	104	94	39	39	31	68	63	63

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4a-2: Era Regression 1980-1989 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per gdp)	-0.2383* (0.1313)	-0.2113 (0.1360)	0.0204 (0.0898)	0.3646* (0.1814)	0.3602* (0.1868)	0.1558 (0.2000)	-0.1025 (0.1259)	-0.1599 (0.1276)	-0.0077 (0.1152)
log(gdp per capita)	0.0398** (0.0157)	0.0555*** (0.0152)	0.0376*** (0.0132)	0.0429 (0.0338)	0.0429 (0.0342)	0.0232 (0.0335)	0.0105 (0.0186)	0.0370* (0.0213)	0.0463*** (0.0153)
sec school enroll	0.0011 (0.0008)	0.0005 (0.0007)	0.0006 (0.0006)	0.0007 (0.0016)	0.0007 (0.0017)	0.0017 (0.0017)	0.0012 (0.0008)	0.0004 (0.0008)	0.0001 (0.0006)
govt cons per gdp		-0.0042*** (0.0016)	-0.0041*** (0.0014)		-0.0003 (0.0019)	-0.0012 (0.0019)		-0.0050** (0.0021)	-0.0063*** (0.0018)
polity2			0.0076*** (0.0016)			0.0039 (0.0039)			0.0078** (0.0032)
Constant	0.1102 (0.0860)	0.0914 (0.0809)	0.2301*** (0.0741)	0.1371 (0.1941)	0.1403 (0.1970)	0.2559 (0.1909)	0.2820*** (0.1061)	0.2174* (0.1122)	0.2279** (0.0874)
R2	0.412	0.460	0.614	0.396	0.397	0.544	0.112	0.191	0.332
N	121	117	111	46	46	41	75	71	70

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4b-2: Era Regression 1980-1989 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per Capita									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per capita)	-0.0018 (0.0054)	-0.0013 (0.0054)	0.0050 (0.0046)	0.0151** (0.0057)	0.0151** (0.0059)	0.0082 (0.0053)	-0.0010 (0.0075)	-0.0051 (0.0075)	0.0020 (0.0076)
log(gdp per capita)	0.0345** (0.0164)	0.0511*** (0.0165)	0.0318** (0.0146)	0.0442 (0.0312)	0.0442 (0.0315)	0.0240 (0.0314)	0.0060 (0.0208)	0.0360 (0.0259)	0.0421** (0.0202)
sec school enroll	0.0014* (0.0008)	0.0008 (0.0008)	0.0006 (0.0006)	0.0002 (0.0015)	0.0002 (0.0016)	0.0014 (0.0016)	0.0013* (0.0008)	0.0005 (0.0008)	0.0001 (0.0006)
govt cons per gdp		-0.0042** (0.0016)	-0.0038** (0.0015)		0.0001 (0.0020)	-0.0008 (0.0019)		-0.0051** (0.0022)	-0.0061*** (0.0019)
polity2			0.0082*** (0.0017)			0.0043 (0.0038)			0.0082** (0.0033)
Constant	0.1313 (0.0898)	0.1070 (0.0857)	0.2589*** (0.0806)	0.1309 (0.1773)	0.1296 (0.1808)	0.2475 (0.1780)	0.3048** (0.1188)	0.2238* (0.1312)	0.2497** (0.1115)
R2	0.394	0.445	0.619	0.450	0.450	0.563	0.107	0.184	0.333
N	121	117	111	46	46	41	75	71	70

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4c-2: Era Regression 1980-1989 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Mineral Rent Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(mineral rent per gdp)	-0.0001 (0.0156)	0.0022 (0.0147)	-0.0071 (0.0138)	0.0531* (0.0275)	0.0493** (0.0185)	0.0065 (0.0169)	-0.0021 (0.0202)	-0.0002 (0.0207)	-0.0038 (0.0190)
log(gdp per capita)	0.0411** (0.0160)	0.0526*** (0.0157)	0.0370*** (0.0124)	0.0599* (0.0326)	0.0622* (0.0313)	0.0213 (0.0337)	0.0097 (0.0162)	0.0301 (0.0220)	0.0452*** (0.0133)
sec school enroll	0.0008 (0.0008)	0.0005 (0.0007)	0.0006 (0.0006)	0.0008 (0.0015)	0.0008 (0.0014)	0.0019 (0.0018)	0.0006 (0.0007)	0.0004 (0.0008)	0.0001 (0.0007)
govt cons per gdp		-0.0045*** (0.0014)	-0.0040*** (0.0015)		-0.0046*** (0.0012)	-0.0016 (0.0020)		-0.0048* (0.0025)	-0.0061*** (0.0021)
polity2			0.0075*** (0.0015)			0.0044 (0.0040)			0.0079** (0.0031)
Constant	0.0929 (0.0900)	0.1007 (0.0829)	0.2347*** (0.0708)	-0.0471 (0.1961)	0.0168 (0.1873)	0.2681 (0.1908)	0.2963*** (0.0957)	0.2542** (0.1120)	0.2336*** (0.0735)
R2	0.323	0.413	0.615	0.425	0.488	0.539	0.053	0.163	0.332
N	132	126	111	53	53	41	78	72	70

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4a-3: Era Regression 1990-1999 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per gdp)	-0.3638*** (0.0698)	-0.2542*** (0.0754)	-0.1521** (0.0689)	-0.0362 (0.2105)	-0.0061 (0.1571)	0.0645 (0.1183)	-0.3331*** (0.0727)	-0.2723*** (0.0836)	-0.2778*** (0.0819)
log(gdp per capita)	0.0417*** (0.0113)	0.0509*** (0.0106)	0.0499*** (0.0108)	0.0324** (0.0142)	0.0382*** (0.0143)	0.0295* (0.0162)	0.0370* (0.0187)	0.0516*** (0.0161)	0.0665*** (0.0131)
sec school enroll	0.0010** (0.0005)	0.0008* (0.0004)	0.0006 (0.0004)	0.0013* (0.0007)	0.0015** (0.0007)	0.0013* (0.0007)	0.0005 (0.0006)	0.0002 (0.0005)	0.0001 (0.0005)
govt cons per gdp		-0.0050*** (0.0012)	-0.0047*** (0.0011)		-0.0067*** (0.0021)	-0.0064*** (0.0022)		-0.0037*** (0.0013)	-0.0039*** (0.0013)
polity2			0.0046*** (0.0015)			0.0124** (0.0056)			0.0025 (0.0024)
Constant	0.1277** (0.0619)	0.1519*** (0.0563)	0.1599*** (0.0570)	0.1961** (0.0761)	0.2406*** (0.0757)	0.2382*** (0.0768)	0.1558 (0.1073)	0.1365 (0.0884)	0.0584 (0.0747)
R2	0.516	0.568	0.652	0.458	0.510	0.615	0.269	0.341	0.463
N	149	144	137	84	83	78	65	61	59

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4b-3: Era Regression 1990-1999 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per Capita									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per capita)	-0.0058 (0.0046)	-0.0022 (0.0039)	0.0034 (0.0038)	0.0088 (0.0055)	0.0090* (0.0050)	0.0095* (0.0049)	-0.0065 (0.0062)	-0.0052 (0.0062)	-0.0050 (0.0055)
log(gdp per capita)	0.0374*** (0.0117)	0.0488*** (0.0113)	0.0426*** (0.0118)	0.0280** (0.0141)	0.0339** (0.0143)	0.0234 (0.0161)	0.0273 (0.0184)	0.0464** (0.0181)	0.0605*** (0.0155)
sec school enroll	0.0014*** (0.0005)	0.0010** (0.0005)	0.0006 (0.0004)	0.0014** (0.0007)	0.0016** (0.0006)	0.0014** (0.0006)	0.0009 (0.0006)	0.0004 (0.0006)	0.0002 (0.0006)
govt cons per gdp		-0.0057*** (0.0012)	-0.0048*** (0.0011)		-0.0069*** (0.0021)	-0.0064*** (0.0022)		-0.0044*** (0.0014)	-0.0046*** (0.0014)
polity2			0.0064*** (0.0017)			0.0133** (0.0051)			0.0038 (0.0025)
Constant	0.1331** (0.0640)	0.1608*** (0.0601)	0.1950*** (0.0617)	0.2134*** (0.0758)	0.2598*** (0.0766)	0.2644*** (0.0787)	0.1962* (0.1066)	0.1678* (0.0969)	0.0984 (0.0854)
R2	0.456	0.540	0.646	0.477	0.531	0.637	0.156	0.276	0.399
N	149	144	137	84	83	78	65	61	59

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4c-3: Era Regression 1990-1999 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Mineral Rent Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(mineral rent per gdp)	-0.0095 (0.0149)	-0.0110 (0.0132)	-0.0280** (0.0113)	-0.0115 (0.0161)	-0.0051 (0.0095)	-0.0242* (0.0123)	-0.0077 (0.0254)	-0.0102 (0.0256)	-0.0252 (0.0231)
log(gdp per capita)	0.0390*** (0.0119)	0.0490*** (0.0107)	0.0433*** (0.0103)	0.0384** (0.0148)	0.0446*** (0.0145)	0.0286* (0.0153)	0.0214 (0.0167)	0.0412** (0.0164)	0.0518*** (0.0143)
sec school enroll	0.0008 (0.0005)	0.0008 (0.0005)	0.0007 (0.0004)	0.0010 (0.0007)	0.0012* (0.0007)	0.0013* (0.0007)	0.0002 (0.0006)	0.0002 (0.0006)	0.0002 (0.0005)
govt cons per gdp		-0.0064*** (0.0012)	-0.0048*** (0.0011)		-0.0088*** (0.0016)	-0.0058** (0.0024)		-0.0044*** (0.0014)	-0.0045*** (0.0014)
polity2			0.0060*** (0.0015)			0.0119** (0.0049)			0.0052** (0.0024)
Constant	0.1258* (0.0656)	0.1734*** (0.0579)	0.2008*** (0.0550)	0.1431* (0.0844)	0.2285*** (0.0774)	0.2503*** (0.0750)	0.2450** (0.0970)	0.2039** (0.0903)	0.1574* (0.0798)
R2	0.326	0.468	0.654	0.325	0.463	0.623	0.086	0.246	0.407
N	162	154	137	93	91	78	68	62	59

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4a-4: Era Regression 2000-2010 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per gdp)	-0.2990*** (0.0431)	-0.2679*** (0.0607)	-0.1421** (0.0615)	-0.2466*** (0.0667)	0.0949 (0.0876)	0.1507 (0.0924)	-0.2798*** (0.0833)	-0.2960*** (0.1030)	-0.2536** (0.1064)
log(gdp per capita)	-0.0033 (0.0100)	-0.0035 (0.0102)	-0.0076 (0.0098)	-0.0193** (0.0091)	-0.0178* (0.0090)	-0.0223* (0.0117)	0.0087 (0.0194)	0.0114 (0.0203)	0.0150 (0.0213)
sec school enroll	0.0032*** (0.0005)	0.0033*** (0.0006)	0.0032*** (0.0005)	0.0039*** (0.0006)	0.0043*** (0.0006)	0.0043*** (0.0006)	0.0022** (0.0009)	0.0022** (0.0009)	0.0022** (0.0009)
govt cons per gdp		-0.0013 (0.0010)	-0.0025*** (0.0008)		-0.0051*** (0.0011)	-0.0059*** (0.0011)		-0.0012 (0.0022)	-0.0012 (0.0021)
polity2			0.0064*** (0.0016)			0.0070 (0.0062)			0.0044 (0.0037)
Constant	0.3822*** (0.0528)	0.3973*** (0.0549)	0.4268*** (0.0525)	0.4738*** (0.0503)	0.5030*** (0.0486)	0.5002*** (0.0478)	0.3239*** (0.1046)	0.3258*** (0.1083)	0.3028*** (0.1104)
R2	0.527	0.525	0.600	0.522	0.581	0.665	0.312	0.300	0.334
N	154	153	146	93	93	88	61	60	58

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4b-4: Era Regression 2000-2010 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Oil Value Per Capita									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(oil value per capita)	-0.0085** (0.0035)	-0.0080** (0.0034)	0.0010 (0.0032)	0.0005 (0.0047)	0.0031 (0.0032)	0.0053 (0.0034)	-0.0091 (0.0059)	-0.0085 (0.0065)	-0.0023 (0.0073)
log(gdp per capita)	-0.0059 (0.0108)	-0.0043 (0.0110)	-0.0132 (0.0103)	-0.0184* (0.0097)	-0.0187** (0.0089)	-0.0246** (0.0122)	-0.0008 (0.0197)	-0.0006 (0.0216)	-0.0042 (0.0235)
sec school enroll	0.0036*** (0.0006)	0.0037*** (0.0006)	0.0033*** (0.0006)	0.0040*** (0.0006)	0.0042*** (0.0006)	0.0042*** (0.0005)	0.0026*** (0.0009)	0.0026*** (0.0009)	0.0026*** (0.0009)
govt cons per gdp		-0.0032*** (0.0005)	-0.0036*** (0.0006)		-0.0043*** (0.0004)	-0.0046*** (0.0004)		-0.0005 (0.0024)	-0.0002 (0.0022)
polity2			0.0085*** (0.0017)			0.0074 (0.0066)			0.0063 (0.0038)
Constant	0.3726*** (0.0568)	0.4068*** (0.0572)	0.4570*** (0.0527)	0.4476*** (0.0573)	0.5029*** (0.0482)	0.5019*** (0.0471)	0.3610*** (0.1082)	0.3691*** (0.1108)	0.3845*** (0.1188)
R2	0.453	0.483	0.587	0.464	0.581	0.666	0.235	0.226	0.273
N	154	153	146	93	93	88	61	60	58

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Table 4c-4: Era Regression 2000-2010 - Cross-Section

Dependent Variable: Transparency; Key independent Variable: Mineral Rent Per GDP									
	full sample	full sample	full sample	democracies	democracies	democracies	autocracies	autocracies	autocracies
log(mineral rent per gdp)	0.0288 (0.0221)	0.0065 (0.0183)	-0.0177 (0.0140)	0.0583** (0.0284)	0.0194 (0.0214)	-0.0184 (0.0171)	-0.0037 (0.0281)	-0.0115 (0.0266)	-0.0281 (0.0211)
log(gdp per capita)	0.0146 (0.0144)	0.0011 (0.0130)	-0.0138 (0.0104)	0.0254 (0.0208)	-0.0024 (0.0141)	-0.0261** (0.0112)	-0.0119 (0.0185)	-0.0133 (0.0197)	-0.0123 (0.0188)
sec school enroll	0.0021*** (0.0008)	0.0029*** (0.0007)	0.0033*** (0.0006)	0.0017 (0.0011)	0.0031*** (0.0009)	0.0044*** (0.0005)	0.0020** (0.0009)	0.0022** (0.0009)	0.0027*** (0.0009)
govt cons per gdp		-0.0030*** (0.0007)	-0.0038*** (0.0005)		-0.0036*** (0.0005)	-0.0045*** (0.0005)		0.0005 (0.0025)	0.0001 (0.0023)
polity2			0.0082*** (0.0016)			0.0059 (0.0061)			0.0074** (0.0036)
Constant	0.2631*** (0.0747)	0.3820*** (0.0674)	0.4718*** (0.0573)	0.2214** (0.1097)	0.4266*** (0.0751)	0.5239*** (0.0561)	0.4400*** (0.1049)	0.4409*** (0.1080)	0.4373*** (0.1030)
R2	0.261	0.353	0.578	0.266	0.390	0.663	0.127	0.164	0.287
N	171	164	148	104	100	88	64	61	58

* p<0.10, ** p<0.05, *** p<0.01, using heteroskedasticity robust standard errors

Tables 5, 6, 7, 8, 9 MENA Effects

Table 5: Resource Rents and Transparency (OLS 1970-2010) - MENA Split

Dependent Variable: Transparency																
	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA
log(oil value per gdp)	-0.1090 (0.0843)	-0.3004* (0.1475)	0.0340 (0.0531)	-0.3843** (0.1420)												
log(oil value per capita)					0.0019 (0.0045)	-0.0036 (0.0094)	0.0093*** (0.0031)	-0.0056 (0.0108)								
log(mineral rent per gdp)									0.0047 (0.0137)	0.2386* (0.1158)	-0.0123 (0.0123)	0.2403* (0.1218)				
log(mineral rent per capita)													0.0095*** (0.0029)	0.0302** (0.0116)	0.0016 (0.0024)	0.0302** (0.0121)
log(gdp per capita)	0.0260** (0.0102)	-0.0229 (0.0145)	0.0129 (0.0093)	-0.0242 (0.0135)	0.0251** (0.0103)	-0.0378* (0.0201)	0.0066 (0.0094)	-0.0364 (0.0224)	0.0358*** (0.0114)	-0.0363** (0.0152)	0.0143 (0.0094)	-0.0350** (0.0154)	0.0370*** (0.0109)	-0.0274** (0.0119)	0.0157* (0.0094)	-0.0277* (0.0129)
sec school enroll	0.0020*** (0.0005)	-0.0008 (0.0012)	0.0015*** (0.0004)	-0.0006 (0.0011)	0.0021*** (0.0005)	0.0001 (0.0013)	0.0014*** (0.0004)	0.0001 (0.0013)	0.0014** (0.0005)	0.0014 (0.0012)	0.0014*** (0.0004)	0.0013 (0.0013)	0.0012** (0.0005)	0.0021 (0.0013)	0.0014*** (0.0004)	0.0021 (0.0014)
govt cons per gdp	-0.0027** (0.0011)	0.0105*** (0.0030)	0.0045*** (0.0008)	0.0115** (0.0037)	0.0037*** (0.0006)	0.0091* (0.0043)	0.0045*** (0.0004)	0.0091* (0.0045)	0.0049*** (0.0015)	0.0072* (0.0033)	0.0043*** (0.0005)	0.0070* (0.0034)	0.0045*** (0.0015)	0.0050 (0.0033)	0.0042*** (0.0006)	0.0050 (0.0035)
polity2			0.0106*** (0.0018)	-0.0054 (0.0050)			0.0118*** (0.0019)	-0.0016 (0.0064)			0.0099*** (0.0018)	0.0009 (0.0050)			0.0100*** (0.0018)	-0.0002 (0.0041)
Constant	0.2362*** (0.0567)	0.5738*** (0.1270)	0.3717*** (0.0560)	0.5359*** (0.1291)	0.2489*** (0.0587)	0.6291*** (0.1644)	0.4078*** (0.0573)	0.6128** (0.2005)	0.2149*** (0.0620)	0.5248*** (0.1680)	0.3660*** (0.0570)	0.5268** (0.1789)	0.1827*** (0.0605)	0.4088** (0.1374)	0.3492*** (0.0563)	0.4079** (0.1442)
R2	0.575	0.583	0.697	0.623	0.570	0.431	0.712	0.433	0.479	0.537	0.690	0.538	0.516	0.671	0.688	0.671
N	142	17	135	17	142	17	135	17	155	17	137	17	155	17	137	17

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 6: Resource Rents and Transparency (Pooled OLS 1970-2010) - MENA Split

Dependent Variable: Transparency																
	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA	non MENA	MENA
L.log(oil value per gdp)	0.2519*** (0.0547)	0.3109*** (0.0790)	-0.1160** (0.0504)	0.3470*** (0.0819)												
L.log(oil value per capita)					-0.0004 (0.0023)	-0.0103* (0.0052)	0.0041** (0.0018)	0.0158*** (0.0057)								
L.log(mineral rent per gdp)									-0.0056 (0.0063)	0.0313 (0.0354)	-0.0149** (0.0061)	0.0331 (0.0337)				
L.log(mineral rent per capita)													0.0077*** (0.0014)	0.0065 (0.0047)	0.0012 (0.0012)	0.0038 (0.0053)
L.log(gdp per capita)	0.0205*** (0.0049)	0.0034 (0.0130)	0.0161*** (0.0046)	0.0127 (0.0128)	0.0177*** (0.0052)	-0.0044 (0.0152)	0.0118** (0.0048)	0.0115 (0.0154)	0.0213*** (0.0054)	-0.0209* (0.0114)	0.0135*** (0.0047)	-0.0134 (0.0108)	0.0224*** (0.0052)	-0.0191* (0.0110)	0.0142*** (0.0047)	-0.0133 (0.0106)
L.sec school enroll	0.0022*** (0.0002)	0.0004 (0.0004)	0.0017*** (0.0002)	0.0002 (0.0004)	0.0023*** (0.0002)	0.0009** (0.0004)	0.0017*** (0.0002)	0.0008* (0.0004)	0.0019*** (0.0003)	0.0013*** (0.0005)	0.0017*** (0.0002)	0.0010* (0.0005)	0.0018*** (0.0002)	0.0014*** (0.0005)	0.0017*** (0.0002)	0.0010* (0.0005)
L.govt cons per gdp	0.0041*** (0.0008)	0.0009 (0.0018)	0.0043*** (0.0006)	-0.0013 (0.0019)	0.0042*** (0.0007)	0.0006 (0.0020)	0.0043*** (0.0005)	-0.0025 (0.0022)	0.0045*** (0.0007)	0.0025 (0.0018)	0.0042*** (0.0005)	-0.0001 (0.0021)	0.0045*** (0.0007)	0.0024 (0.0019)	0.0043*** (0.0006)	0.0000 (0.0021)
L.polity2			0.0065*** (0.0007)	0.0024 (0.0023)			0.0071*** (0.0007)	0.0017 (0.0027)			0.0067*** (0.0007)	0.0053* (0.0027)			0.0069*** (0.0007)	0.0050* (0.0028)
Constant	0.3272*** (0.0271)	0.5030*** (0.0739)	0.3808*** (0.0261)	0.5056*** (0.0826)	0.3362*** (0.0285)	0.5387*** (0.0784)	0.4014*** (0.0269)	0.5178*** (0.0941)	0.3232*** (0.0294)	0.5639*** (0.0836)	0.3973*** (0.0267)	0.6080*** (0.0928)	0.2953*** (0.0287)	0.5320*** (0.0807)	0.3873*** (0.0263)	0.5943*** (0.0991)
R2	0.499	0.258	0.614	0.345	0.474	0.160	0.612	0.266	0.404	0.099	0.613	0.165	0.429	0.115	0.610	0.168
N	737	77	696	74	738	77	696	74	792	77	697	74	792	77	697	74

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 7a: Oil Value Per GDP and Transparency (5 Year Panel 1970-2010)

Dependent Variable: Transparency				
	non MENA	MENA	non MENA	MENA
L.log(oil value per gdp)	-0.2418*** (0.0901)	-0.3534* (0.1766)	-0.1875** (0.0883)	-0.1174 (0.1701)
L.log(gdp per capita)	0.0547*** (0.0148)	0.1613** (0.0597)	0.0454*** (0.0136)	0.1051 (0.0739)
L.sec school enroll	0.0003 (0.0003)	-0.0014 (0.0011)	-0.0001 (0.0004)	-0.0021 (0.0014)
L.govt cons per gdp	-0.0007 (0.0008)	-0.0026 (0.0029)	0.0007 (0.0009)	0.0049 (0.0032)
L.polity2	0.0059*** (0.0009)	0.0123 (0.0087)	0.0048*** (0.0009)	-0.0024 (0.0076)
Constant	0.1092 (0.1067)	-0.5144 (0.4469)	0.2046* (0.1038)	-0.3104 (0.5051)
time fixed effects	No	No	Yes	Yes
R2	0.242	0.277	0.343	0.617
# of observations	696	74	696	74
# of countries	132	16	132	16

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 7b: Oil Value Per Capita and Transparency (5 Year Panel 1970-2010)

Dependent Variable: Transparency				
	non MENA	MENA	non MENA	MENA
L.log(oil value per capita)	-0.0034 (0.0048)	-0.0467*** (0.0148)	0.0035 (0.0047)	-0.0208*** (0.0070)
L.log(gdp per capita)	0.0510*** (0.0162)	0.1743** (0.0667)	0.0392** (0.0151)	0.1266* (0.0635)
L.sec school enroll	0.0003 (0.0004)	-0.0004 (0.0009)	-0.0000 (0.0004)	-0.0016 (0.0010)
L.govt cons per gdp	-0.0003 (0.0009)	-0.0017 (0.0021)	0.0011 (0.0009)	0.0043 (0.0031)
L.polity2	0.0059*** (0.0009)	0.0107 (0.0083)	0.0048*** (0.0009)	-0.0006 (0.0075)
Constant	0.1265 (0.1155)	-0.5566 (0.4719)	0.2278** (0.1122)	-0.4108 (0.4524)
time fixed effects	No	No	Yes	Yes
R2	0.230	0.422	0.336	0.642
# of observations	696	74	696	74
# of countries	132	16	132	16

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 7c: Mineral Rents Per GDP and Transparency (5 Year Panel 1970-2010)

Dependent Variable: Transparency				
	non MENA	MENA	non MENA	MENA
L.log(mineral rent per gdp)	-0.0079 (0.0132)	-0.0979 (0.0621)	-0.0014 (0.0123)	0.0282 (0.0548)
L.log(gdp per capita)	0.0504*** (0.0175)	0.0636 (0.0442)	0.0415** (0.0163)	0.1006 (0.0657)
L.sec school enroll	0.0002 (0.0004)	0.0003 (0.0012)	-0.0000 (0.0005)	-0.0019 (0.0015)
L.govt cons per gdp	-0.0003 (0.0010)	-0.0024 (0.0031)	0.0010 (0.0010)	0.0056 (0.0032)
L.polity2	0.0059*** (0.0010)	0.0050 (0.0108)	0.0048*** (0.0010)	-0.0027 (0.0094)
Constant	0.1321 (0.1254)	0.0892 (0.3185)	0.2178* (0.1225)	-0.3247 (0.4770)
time fixed effects	No	No	Yes	Yes
R2	0.229	0.271	0.335	0.615
# of observations	697	74	697	74
# of countries	133	16	133	16

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 8a: Oil Value Per GDP and Transparency (5 Year Panel 1970-2010)-Polity2 Removed

Dependent Variable: Transparency				
	non-MENA	MENA	non-MENA	MENA
L.log(oil value per gdp)	-0.2391*** (0.0884)	-0.2157 (0.2107)	-0.1719** (0.0865)	-0.1424 (0.1432)
L.log(gdp per capita)	0.0498*** (0.0158)	0.0915 (0.0939)	0.0354** (0.014)	0.1269 (0.0748)
L.sec school enroll	0.0011*** (0.0004)	0.0003 (0.0015)	-0.0003 (0.0005)	-0.0023* (0.0012)
L.govt cons per gdp	-0.0006 (0.001)	-0.0037 (0.003)	0.0012 (0.0009)	0.0048 (0.0029)
Constant	0.1047 (0.1131)	-0.1286 (0.6735)	0.3041*** (0.1075)	-0.4561 (0.5441)
time fixed effect	No	No	Yes	Yes
R2	0.115	0.229	0.286	0.624
# of observations	737	77	737	77
# of countries	139	16	139	16

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 8b: Oil Value PC and Transparency (5 Year Panel 1970-2010)-Polity2 Removed

Dependent Variable: Transparency				
	non-MENA	MENA	non-MENA	MENA
L.log(oil value per capita)	-0.0033 (0.0046)	-0.0447*** (0.0149)	0.0028 (0.0046)	-0.0211*** (0.0063)
L.log(gdp per capita)	0.0437*** (0.0166)	0.1237 (0.0857)	0.0280* (0.0147)	0.1337* (0.0702)
L.sec school enroll	0.0011*** (0.0004)	0.0008 (0.0012)	-0.0003 (0.0005)	-0.0017* (0.0009)
L.govt cons per gdp	-0.0002 (0.001)	-0.003 (0.0024)	0.0017* (0.0009)	0.0044 (0.0029)
Constant	0.1385 (0.1198)	-0.2756 (0.6121)	0.3467*** (0.1131)	-0.4701 (0.5194)
time fixed effect	No	No	Yes	Yes
R2	0.096	0.381	0.281	0.649
# of observations	738	77	738	77
# of countries	139	16	139	16

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 8c: Mineral Rent Per GDP and Transparency (5 Year Panel 1970-2010)-Polity2 Removed

Dependent Variable: Transparency				
	non-MENA	MENA	non-MENA	MENA
L.log(mineral rent per gdp)	-0.018 (0.0143)	-0.1134*** (0.0263)	0.0012 (0.0118)	0.0366 (0.0356)
L.log(gdp per capita)	0.0482*** (0.0173)	0.0452 (0.0677)	0.0310* (0.0157)	0.1248* (0.0648)
L.sec school enroll	0.0009** (0.0004)	0.0008 (0.0012)	-0.0005 (0.0004)	-0.0021* (0.0012)
L.govt cons per gdp	0.0005 (0.001)	-0.0029 (0.0027)	0.0021** (0.0009)	0.0057** (0.0027)
Constant	0.0919 (0.125)	0.1862 (0.4999)	0.3230*** (0.1233)	-0.4948 (0.4854)
time fixed effect	No	No	Yes	Yes
R2	0.102	0.266	0.291	0.622
# of observations	792	77	792	77
# of countries	151	16	151	16

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table 9: Interaction Effects: Oil Value Per GDP - Pooled OLS

Dependent Variable: Transparency								
L.log(oil value per gdp)	-0.2638*** (0.0470)	-0.2584*** (0.0546)	-0.2306*** (0.0470)	-0.2224*** (0.0527)	-0.1572*** (0.0430)	-0.1220** (0.0507)	-0.1669*** (0.0423)	-0.1602*** (0.0489)
L.log(gdp per capita)	0.0225*** (0.0046)	0.0226*** (0.0046)	0.0286*** (0.0046)	0.0289*** (0.0047)	0.0178*** (0.0044)	0.0184*** (0.0044)	0.0170*** (0.0044)	0.0177*** (0.0045)
L.sec school enroll	0.0019*** (0.0002)	0.0019*** (0.0002)	0.0019*** (0.0002)	0.0019*** (0.0002)	0.0015*** (0.0002)	0.0015*** (0.0002)	0.0015*** (0.0002)	0.0015*** (0.0002)
L.govt cons per gdp	-0.0039*** (0.0007)	-0.0039*** (0.0007)	-0.0042*** (0.0008)	-0.0042*** (0.0007)	-0.0042*** (0.0006)	-0.0042*** (0.0006)	-0.0041*** (0.0006)	-0.0042*** (0.0006)
mena	0.0236* (0.0138)	0.0264 (0.0177)	0.0212 (0.0169)	0.0234 (0.0155)	0.0658*** (0.0137)	0.0827*** (0.0166)	0.0459*** (0.0172)	0.0644*** (0.0165)
L.mena*log(oilvalue per gdp)		-0.0235 (0.1067)				-0.1425 (0.1003)		
L.mena*polity2			0.0004 (0.0019)				-0.0043** (0.0019)	
L.mena*polity2*log(oilvalue per gdp)				0.0047 (0.0118)				-0.0016 (0.0105)
L.polity2					0.0065*** (0.0007)	0.0064*** (0.0007)	0.0068*** (0.0007)	0.0065*** (0.0007)
Constant	0.3199*** (0.0253)	0.3195*** (0.0255)	0.2866*** (0.0254)	0.2847*** (0.0259)	0.3762*** (0.0251)	0.3727*** (0.0252)	0.3800*** (0.0249)	0.3769*** (0.0254)
R2	0.473	0.473	0.539	0.539	0.589	0.590	0.591	0.589
N	814	814	770	770	770	770	770	770

* p<0.10, ** p<0.05, *** p<0.01, heteroskedasticity robust standard errors

Table A1: List of Variables Used and Data Sources

Variable	Source
Oil Value	World Bank, the US Energy Information Administration, the BP Statistical Review, and the US Geological Survey. Available at http://thedata.harvard.edu/dvn/dv/mlross .
Non-Fuel Mineral Rents	World Development Indicators, calculations of the author; sum of resource rent for bauxite, copper, iron, lead, nickel, phosphate, tin, zinc, gold, and silver
Release of Information Index	Williams (2009 & 2011), World Development Indicators, International Monetary Fund
Democracy	Cheibub, Gandhi and Vreeland (2010)
Transparency of Government Policy	World Economic Forum
Open Budget Index	International Budget Partnership; http://internationalbudget.org
GDP per capita	World Development Indicators
Gross secondary school enrollment	World Development Indicators, Barro-Lee dataset
Government Consumption (%GDP)	World Development Indicators
Polity2	Polity2 from Polity IV dataset