IS RUSSIA CURSED BY OIL?

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Russia is often thought to be a classic case of the resource curse—the idea that natural resource wealth tends to impair democratic development.[1] Some see the country as doomed to authoritarian politics by its enormous endowments of oil and gas. "Russia's future will be defined as much by the geology of its subsoil as by the ideology of its leaders," writes Moisés Naím, editor-in-chief of *Foreign Policy* magazine and former trade and industry minister of petroleum-rich Venezuela. "A lot of oil combined with weak public institutions produces poverty, inequality, and corruption. It also undermines democracy."[2] *New York Times* columnist Thomas Friedman sees a close relationship between world commodity prices and the extent of liberty in resource-rich states: a higher oil price means less freedom. Friedman suggests that Russia, from Gorbachev to Putin, fits this relationship perfectly.[3]

This view is immediately plausible. There is no question that oil and gas have been at the core of Russia's political economy in recent decades. The plunge in petroleum prices in the 1980s helped create the economic crisis that the former Soviet governments failed to overcome.[4] Surging commodity prices after 1998 coincided with the re-centralization of power under Putin, the reassertion of Kremlin control over national television, the spread of credible reports of electoral fraud, and the harassment of independent social and political organizations. The leading state-controlled oil and gas companies even served as the regime's favored tool for chipping away at civic freedoms. Kremlin-controlled gas monopoly Gazprom, using a mixture of business maneuvers and administrative muscle, took over previously critical media outlets. State-owned oil company Rosneft swallowed assets owned by the oligarch Mikhail Khodorokovsky, who had been funding political opposition and civil society groups.

Arguments that seem to fit so well, however, deserve particular scrutiny. Were oil and gas—and the fluctuations in their prices—as central to determining the course of political development in Russia as advocates of this view suggest? If so,

Journal of International Affairs, Spring/Summer 2010, Vol. 63, No. 2.
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by what pathways did the resource curse operate? Is Russia condemned to endure authoritarian government—in the worst case, to degenerate into the kind of oil-fueled autocracy characteristic of the Persian Gulf? This paper briefly examines the evidence for the resource curse worldwide and uses cross-national experience to gauge the likely effect of resource wealth on political institutions in Russia.

The evidence is consistent with the claim that Russia would be somewhat more democratic if it had no oil or gas. International comparisons, however, suggest that very little of the variation in Russia's political regime since 1985 can be attributed to changes in its oil and gas income or reserves. When studied systematically, cross-national data imply that for countries with an established petroleum industry like Russia, even large gyrations in oil revenues have a relatively minor impact. Based on this experience, there is little reason to fear that petroleum wealth will cause Russia to sink deep into autocracy even if oil prices rise to unprecedented heights.

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What Do We Know About the Resource Curse?

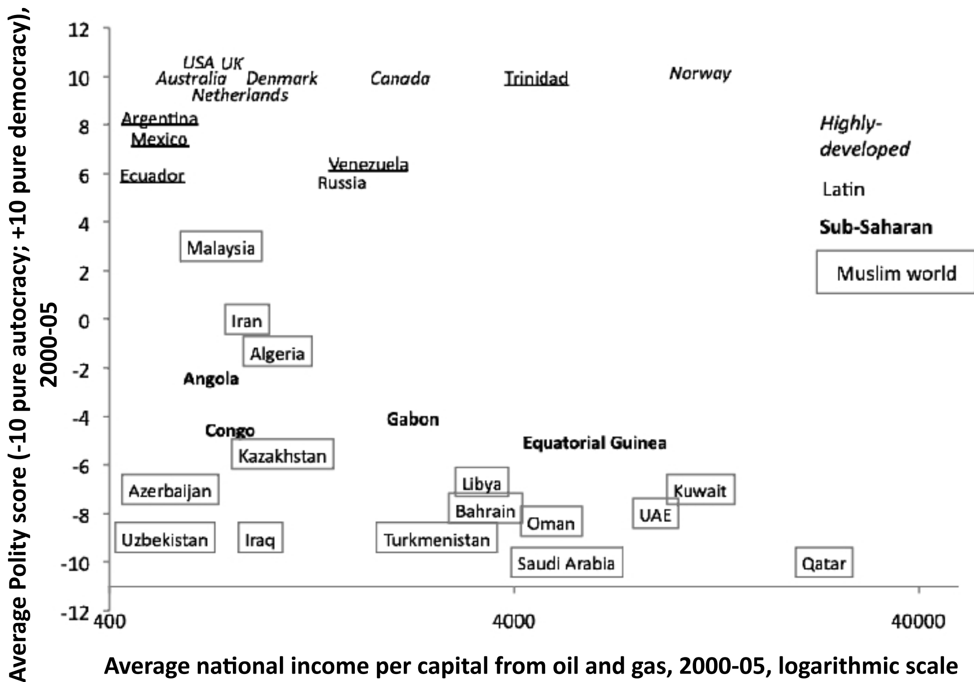
In the last decade, scholars have used statistical methods to test the hypothesis that oil and gas wealth is inimical to democracy. Most believe there is evidence of a statistically significant relationship, although there are some dissenters.[5] At the same time, recognition has been growing that the effects of oil can be quite different in different types of countries and in different periods.

Figure 1 plots the political regimes of the world's thirty-two largest oil and gas producers from 2000 to 2005, including all countries having an average annual output of oil and gas worth at least $400 per capita at world prices.[6] To classify the countries' political regimes, the ratings of the Polity IV dataset (September 2009 revision), compiled by a team under Monty Marshall and Keith Jaggers at George Mason University, have been used. The 21-point scale runs from -10 to +10. Scores of -10 to -6 represent autocracies and scores of 6 to 10 represent democracies.[7]

A first point to note is the great variation in regime types among the major oil producers. Their political systems range from consolidated autocracies (e.g. Saudi Arabia and Qatar) to consolidated democracies (e.g. Norway and Trinidad and Tobago). Moreover, the pattern looks anything but random. With one exception, the countries fall naturally into four groups. First, there are the highly industrialized countries in Western Europe, North America, and Oceania. Major oil producers in this category such as Norway, Canada, and Denmark are stable

liberal democracies. Research confirms that they are not subject to any resource curse.[8] Second, there are the oil-rich states of Latin America such as Venezuela, Mexico, and Trinidad and Tobago. These are also classified by Polity as democracies, although some are closer to the category's bottom edge. As Thad Dunning has shown, not only is there no evidence of a resource curse in Latin America, there appears to be a resource blessing. The oil-rich countries in that region have actually been more democratic on average than their peers. Dictatorships in Latin America that had oil were more likely to democratize than those that did not.[9]

Figure 1: Political Regimes of Major Oil and Gas Producers, 2000 to 2005



Source: Michael Ross, Database oil and gas income, UCLA, 2009; Polity IV, 2009 update. Major oil and gas producers: where annual income from oil and gas > $400 per capita. "Muslim world": countries where more than 40 percent of the population were Muslim adherents in 2000 (D.B. Barrett, G.T. Kurain, and T.M. Johnson, *World Christian Encyclopedia*, 2nd ed., 2001, New York, Oxford University Press, as in Robert Barro, Religion Adherence Dataset, www.economics.harvard.edu/faculty/barro/data_sets_barro.)

The third group consists of oil-producers in sub-Saharan Africa, which are found between -6 and -2 on the 21-point scale, classifying them as intermediate regimes just above the range of autocracy. In this region, scholars have found evidence that greater resource dependence renders democracies more vulnerable.[10] Fourth, there are the countries of the Muslim world. It is striking that all the

countries at the bottom of Figure 1 have large Muslim communities. (The converse is not true: some Muslim oil producers like Malaysia are closer to democracy than dictatorship.) Indeed, among the major oil producers, the only ones that Polity classified as autocracies, with scores of -6 or lower, were countries in which Muslim adherents made up more than three quarters of the population. Of course, this is merely an observation about the pattern rather than a claim about causality. Some evidence presented below suggests that once all the differences among countries are taken into account, the effects of oil and gas are just as strong in non-Muslim-majority countries as in Muslim-majority ones.

Finally, there is the one country that does not belong in any of these groups—Russia—which, in Figure 1, appears to be grouped with Latin America.

Some simple statistics help to elucidate patterns in the data. Table 1 shows a series of regressions of countries' Polity scores on the natural log of their per capita income from oil and gas. All regressions are controlled for the natural log of countries' gross domestic product per capita (at purchasing power parity, from the Penn World Tables), since a great deal of work suggests that more developed countries tend to be more democratic. All regressions are run on panels that include all countries for which data were available in the period from 1960 to 2005. To reduce autocorrelation, an established practice of using only observations from every fifth year was followed, starting in 1960.[11] All regressions include a full set of year dummies. Models 1 to 9 also include country-fixed effects, which control for any unchanging characteristics of the country. Thus, these regressions pick up the way in which changing levels of oil and gas income, within given countries, correlate over time with the nature of those countries' political regimes. Models 10 to 18 do not include country-fixed effects, but include a one-period autoregressive process to correct for autocorrelation. Thus, these models capture both correlations between petroleum income and regimes over time, and correlations between these variables, across countries (See Table 1).

Models 1 and 10 show that, looking at all countries for the full period from 1960 to 2005, there is a statistically significant relationship between higher oil and gas income and a less democratic form of government. This relationship exists whether one looks just at change over time (model 1) or both variation over time and across countries (model 10). If one controls for the nature of the regime five years earlier, the effect of oil and gas income is still significant, but is only a little more than half as large (models 2 and 11). Thus, the short-run effect of an increase in resource income may be smaller than the total effect. Although the effect of oil and gas appears weaker in predominantly Muslim countries, if we look at the random effects models (compare the coefficients of -.23 in model 12 and -.52 in model 10), when controlling for all countries' fixed characteristics, more oil and

gas income is associated with just as large a decrease in democracy in non-Muslim countries (models 3 and 1).[12]

When looking at the full period and controlling for country characteristics, it is only among very poor countries that oil and gas income correlates over time with less democracy. If one looks also at the cross-country variation, however, the strongest correlation is among countries at intermediate levels of development (GDP per capita at PPP between $5,000 and $15,000). Political scientist Michael Ross has noted that the relationship between resource wealth and less democracy does not appear in data from before the early 1980s. Up to that point, oil and gas did not appear to have any negative effect. It was in the so-called Third Wave of democracy, which culminated in the Eastern European transition from communism, that major oil producers started to stand out by democratizing less than their oil-poor neighbors. The regressions in Table 1 confirm this. In the fixed effects regressions, there is no effect of oil in the period before 1985, and in the random effects models the earlier effect is weaker (models 7, 8, 16, and 17).

The impact of oil at different income levels also appears to change after 1985. In the later period, it was the countries at intermediate income levels that showed the strongest effect of petroleum wealth. A final pair of models (9 and 18) include only those countries with intermediate income levels in the post-1985 period. These models show that the largest estimated effects of oil and gas income on democracy were found by experimenting with different specifications.

In short, the regressions illustrate and confirm the results of earlier work on the relationship between oil wealth and democracy. Since the early 1980s—but not before that—low and middle-income countries outside Latin America that earned large amounts of income from oil and gas have tended to be less democratic.

What Does This Imply About Russia?

Most of the models in Table 1 suggest a statistically significant negative relationship between petroleum income and democracy. It is difficult to be sure how large the effect is given the wide range of estimates across different specifications, but the pattern of evidence worldwide is generally consistent with the claim that Russia would be more democratic today if it had no oil or gas at all.

What about the effect of changes in Russia's oil and gas income since the late Soviet period? Between 1985 and 1998, the value of Russia's oil and gas output fell from $2,207 per capita to $476 per capita by Ross's estimates. By 2006, the value had risen again to $2,765. As many observers have pointed out, the fall and rise in Russia's oil receipts mirror the rise and fall in political freedom in the country under the consecutive leadership of Gorbachev, Yeltsin, and Putin. Can oil explain Russia's political trajectory?

Table 1: Oil and Gas Income Per Capita and Democracy (dependent variable is Polity score on 21-point scale, from Polity IV 2009 update)

	Fixed effects, standard errors clustered by country									*Random effects, AR(1)*								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Basic model	With Polity 5-yr. Lag	Muslims < 50 % of popul-ation	GDP per capita < $5000	GDP per capita $5000-15000	GDP per capita > $15000	Before 1985	Since 1985	Since 1985, GDP per cap. $5000-15000	Basic model	With Polity 5-yr. lag	Muslims < 50 % of popul-ation	GDP per capita < $5000	GDP per capita $5000-15000	GDP per capita > $15000	Before 1985	Since 1985	Since 1985, GDP per cap. $5000-15000
Polity lagged 5 years		.51 [c] (.05)									.67 [c] (.02)							
Ln GDP per capita	-.02 (.79)	-.13 (.53)	-.53 (.93)	-.42 (1.04)	3.68 [a] (2.06)	-.22 (.22)	1.22 (1.20)	-1.07 (.92)	2.10 (2.25)	2.29 [c] (.32)	1.16 [c] (.18)	3.15 [c] (.31)	1.73 [c] (.58)	6.60 [c] (1.07)	-.30 (.35)	3.02 [c] (.46)	2.76 [c] (.36)	4.51 [c] (1.53)
Ln oil and gas income per capita	-.32 [b] (.15)	-.17 [a] (.10)	-.38 [b] (.16)	-.60 [c] (.20)	-.02 (.52)	-.01 (.02)	.05 (.19)	-.31 (.20)	-1.58 [b] (.69)	-.52 [c] (.11)	-.29 [c] (.06)	-.23 [b] (.11)	-.50 [c] (.16)	-.72 [c] (.18)	-.20 [c] (.06)	-.42 [c] (.15)	-.73 [c] (.13)	-.95 [c] (.23)
Constant	-.43 (6.26)	3.77 (4.61)	5.13 (7.40)	-.57 (7.52)	-30.58 [a] (17.35)	7.67 [c] (2.11)	-10.01 (9.59)	10.54 (7.61)	-8.52 (20.80)	-18.05 [c] (2.54)	-9.79 [c] (1.49)	-23.61 [c] (2.53)	-15.33 [c] (4.34)	-53.23 [c] (9.39)	8.97 [c] (3.42)	-23.86 [c] (3.65)	-18.35 [c] (3.06)	---
N	1,232	1,066	970	655	350	227	532	700	200	1,232	1,066	970	655	350	227	532	700	200
Countries	157	157	122	103	86	43	131	157	66	157	157	122	103	86	43	131	157	66
R^2	.0733	.7422	.0122	.1186	.1033	.1319	.2186	.0011	.1724	.3091	.7882	.4443	.1809	.2879	.3679	.3040	.3127	.2211

Sources: Penn World Tables for real GDP per capita (adjusted for purchasing power parity); Polity IV dataset (September 2009 update); Michael Ross dataset on oil and gas income, 2009. Panels include every fifth year from 1960 to 2005. Full set of year fixed effects included in all regressions (results not shown). Full set of country fixed effects included in Models 1-9, standard errors clustered by country. Random effects models adjusted for AR(1) process. a $p < .10$ b $p < .05$ c $p < .01$.

The answer appears to be: only a small part of it. The true effect of petroleum income probably lies somewhere within the range defined by the coefficients in the various models of Table 1. It turns out that whichever of these is used, the implied effect of Russia's changing oil and gas income is surprisingly small. A low estimate is the coefficient of -.32 in model 1. The highest estimate is the coefficient of -1.58 in model 9. Applying these to the Russian data, the drop in oil and gas earnings after 1985 predicts an increase in Russia's Polity score of between 0.5 and 2.4 points on the 21-point Polity scale. The increase in oil and gas income after 1998 implies a fall in the country's Polity score of 0.6 to 2.8 points. Figure 2 shows the predicted path of Russia's score based on the variation over time in its oil and gas income.

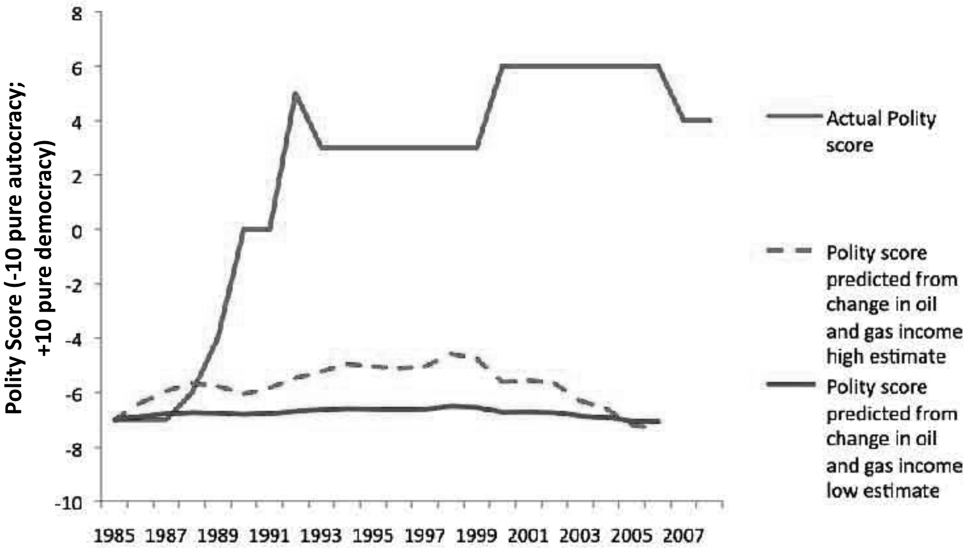
Clearly, if the experience of other countries is a guide, the ups and downs of Russia's petroleum income can explain at most a small fraction of the changes in its political regime over the last twenty-five years. This, too, is consistent with what previous research has shown about the resource curse. As Ross pointed out in a seminal article in 2001, the marginal effect of oil on the political regime falls sharply as the amount of oil produced increases.[13] This is captured here by the modeling of the oil effect in logs. In models with the oil and gas income variable not logged (not shown here), this variable has a perversely positive coefficient in the fixed effects basic model and is marginally significant. It is significantly negative in the random effects models but here too, the implied effect is small. In a version of model 10 with oil and gas income not logged, the estimated coefficient implies that the increase in oil and gas income between 1998 and 2006 should have reduced Russia's Polity score by just 0.2 points.

> The pattern of evidence worldwide is generally consistent with the claim that Russia would be more democratic today if it had no oil or gas at all.

The effects of oil are not always small. For a country that starts producing a large amount of oil from scratch, the implied effect on the regime can be sizeable. In Equatorial Guinea between 1990 and 2005, oil and gas income increased from zero to $13,674 per capita. Since the country's GDP per capita started out well below $5,000, the estimated coefficient of -.60 from model 4 in Table 1 was used. The model predicts a fall in Equatorial Guinea's Polity score of almost six points. The diminishing marginal effect of oil also implies an asymmetry worth keeping in mind. Were Russia's oil and gas income to increase from its present level, the models suggest that this would lead to only a very small further deterioration in its democracy. By contrast, were Russia's oil and gas income to dry up completely,

the implied increase in democracy would be much larger.

Figure 2: Oil and Gas Income and Russia's Political Regime, 1985 to 2008



Source: Author's calculations using Polity IV (September 2009 update). Polity scores are for USSR in 1985-91, Russia in 1992-08. Predictions made starting from initial Polity score of -7 and adding changes implied by the coefficients on Ln oil and gas income in Table 1.

The small size of the estimated effect in Russia is not just an idiosyncrasy of this analysis. Applying the estimates of other scholars yields similar results. Silje Aslaksen, for instance, estimates the relationship between the value of countries' oil production (as a share of GDP) and democracy as measured by both Polity and Freedom House.[14] Using either democracy measure, she finds coefficients of -.002 to -.004, depending on the specification, where the dependent variable, democracy, is normalized to range between 0 and 1. Using the same data (from the World Bank's Adjusted Saving Database), one finds that Russia's oil production as a share of GDP rose from about 11 percent in 1998 to about 23 percent in 2006, an increase of twelve percentage points. Applying Aslaksen's estimated coefficients, this increase would result in a decrease in democracy of between 2.4 and 4.8 points on a 100-point scale. On the Polity scale, running from -10 to +10, that corresponds to a change of just 0.5 to 1 point.

In another paper, Egorov, Guriev, and Sonin demonstrate that among autocracies and imperfect democracies, greater proven oil reserves correlate with lower media freedom as judged by the organization Freedom House.[15] This relationship holds both cross-nationally and over time. Again, the oil variable was entered logarithmically, which implies that for countries like Russia the effect of recent

changes is very small. Using the largest negative coefficient the authors obtained (-2.87, from model 5, Table 1), the massive increase in the value of Russia's proven oil reserves from $710 billion in 1998 to $7.68 trillion in 2008 should have reduced press freedom by seven points on a 100-point scale—roughly equivalent to the gap in press freedom between the United States and Norway.[16]

In short, the pattern of evidence from around the world suggests that the ups and downs in Russia's oil and gas income in recent decades have only had a minor influence on its regime. Given that, by almost any measure, very large changes occurred in Russia's political system during the last 25 years, one must look to other factors to explain these changes. Of course, oil and gas revenues may have been more important in certain years, but on average they appear to have played a secondary role.

Specific Pathways

The apparently limited impact of oil on politics in Russia makes sense when one considers the various mechanisms by which scholars have argued that natural resource wealth blocks or erodes democracy. It is hard to find much evidence of these mechanisms at work in Russia. There are five main arguments.

Fiscal bargains

The argument that has found the most support is that large mineral endowments obviate the need for rulers to come to agreement with their subjects over fiscal issues. Democracy developed in Europe, according to one popular view, because rulers were forced to grant representation to at least some classes of the population in return for taxation. By contrast, in resource-rich states, rulers can live as rentiers, spending their revenues from the sale of minerals rather than relying on taxes.

This fits the situation in the Persian Gulf where the burden of taxation is unusually low. In Bahrain, tax revenues make up just 4 to 5 percent of GDP; in Kuwait, they come to about 1 percent.[17] Qatar has no personal income tax, no personal property tax, and no value-added or sales tax. Despite not paying much tax at all, the country's population receives a remarkable set of benefits from the state—from free education, healthcare, and telephone service to guaranteed jobs in the civil service upon graduation from high school, housing allowances, and free plots of land.[18] Overwhelmed with royal largesse, most Qataris have been reluctant to campaign for political rights.

The rentier argument assumes that there are sufficient rents to keep the public at bay, yet oil states differ greatly in how large their oil revenues are in per capita terms. In Qatar and its Persian Gulf neighbors, the amounts are truly astounding.

If the value of oil and gas produced in 2006 had been shared among all Qataris, each would have received $45,000.[19] The government could have financed all its expenditures for two years with its annual revenues from exports of oil and gas.[20] In many other oil states, however, the take is far more modest. In Malaysia, for instance, the country's total income from oil and gas valued at world prices came to only $1,300 per capita in 2006 (see Figure 1). In the oil-rich sultanate of Brunei, fuel exports in 2006 came to 64 percent of GDP. In Malaysia, they were 14 percent (see Table 2). The political consequences of $45,000 a year per capita in oil income are bound to be different from those of $1,000 a year.

Another key distinction is whether oil and gas are exploited by the state itself or by private companies which the state must then tax. In recent years, about three-quarters of all worldwide oil was produced by state-owned national oil companies.[21] But there are some exceptions. The logic of the rentier argument suggests that if governments must bargain with the private sector owners of oil companies over taxation, it could lead to a more open and competitive type of politics.[22]

Table 2: Fuel Exports, 2006

	% GDP	$ per capita		% GDP	$ per capita
Brunei Darussalam	64	19,258	Iran, Islamic Rep.	29	915
Bahrain	62	13,306	Singapore	26	8,101
Qatar	59	30,918	Norway	25	17,779
Trinidad and Tobago	57	8,144	Belarus	20	777
United Arab Emirates	56	21,333	**Russian Federation**	**19**	**1,340**
Oman	55	7,388	Ecuador	18	571
Saudi Arabia	54	8,101	Cote d'Ivoire	18	159
Azerbaijan	52	1,298	Bolivia	17	202
Gabon	49	3,343	Vietnam	16	115
Algeria	46	1,606	Malaysia	14	845
Nigeria	39	399	Sudan	14	128
Yemen, Rep.	36	319	Syria	13	223
Venezuela, RB	33	2,233	Cameroon	12	121
Kazakhstan	32	1,717	Lithuania	11	980

Source: Calculated from World Bank, World Development Indicators (Washington, DC: World Bank, 2009).

How do these considerations apply to Russia? Although its oil and gas reserves are vast, so is its population. As a result, Russia's annual income from oil and gas per capita—about $2,800 in 2006 if sold at world market prices, which it was not—is nowhere near that of a Persian Gulf emirate.[23] Revenues from oil and gas exports in 2006 came to about $1,340 per person, a bit below the level for Australia.[24] The budget derived about one-third of its revenues in 2007 from oil and gas—a considerable amount, but still far less than the more than 70 percent of

the budget that oil revenues constitute in Bahrain, Kuwait, Oman, or the United Arab Emirates.[25] As for ownership, since the mid-1990s, Russia has been one of a handful of countries, including the United States and Canada, where most oil is produced by independent, private companies rather than by state-dominated projects, with or without foreign partners. It is easy to forget this fact amid the outcry over Putin's measures to expand the state's presence, but even after the re-nationalizations of Yukos and Sibneft and the revision of terms on the Sakhalin II project, estimates of the share of oil produced in majority state-owned companies ranged from 37 to 42 percent in 2008.[26] In the gas sector, the state's stake in Gazprom was increased to just over 50 percent through the repurchase of shares, but at the same time, it became legal for foreigners to own shares directly.[27]

Although the oil and gas sectors contribute a great deal to the budget, most revenue comes from other sectors. Additionally, much of the oil and gas revenues have to be extracted in the form of taxes from privately-owned companies. The government cannot live off its rents, nor does it have remotely enough oil wealth to keep the population cocooned in a Persian-Gulf-style system of cradle-to-grave benefits. As a result, the government must enter into negotiations with the private sector—in the 1990s, the level of ad hoc bargaining was considered a scandal—and it has worked to create a modern tax system with personal income taxes, value added tax (VAT), and payroll taxes. Tax revenues of the consolidated budget came to about 30 percent of GDP in 2007.[28]

Repression

A second argument is that revenues from oil and gas enable governments to repress their populations. Mineral rents provide the cash to hire more policemen, train security services, and monitor citizens with high technology equipment. The huge stakes involved might also make incumbents more determined to use violence to crush political opposition.

Ross examined this, using the annual frequencies of torture, extrajudicial killings, political imprisonment, and disappearances attributable to the government as a measure of repression, as collected from U.S. State Department human rights reports by Cingranelli and Richards.[29] He found that in controlling for regime type, oil producers were no more repressive than non-oil producers.[30]

Oil and modernization

Another influential tradition of thought argues that democratization tends to occur only after societies are transformed by modernization. The idea is that the spread of education, industrialization, urbanization, occupational specialization, and modern mass media often prompt new popular demands for government

accountability. Accordingly, if countries grow rich by extracting oil or other minerals, it is argued the social changes associated with modernization in Western Europe and North America may not take place. Minerals can be extracted in enclaves, often staffed by foreigners, while the surrounding society remains predominantly traditional.

Whether such social transformations are necessary or sufficient conditions for democratization is debatable. The Soviet Union was able to industrialize without prompting any mass demands for democracy before the Gorbachev years.[31] Regardless, the argument that resource wealth prevents industrialization does not apply well to countries that were already industrialized when they discovered oil or when the oil boom of the 1970s occurred, creating massive rents for petroleum producers. Oil-rich states began from very different starting points. In the Persian Gulf and North Africa, many were tribal communities of farmers, nomads, traders, or pearl divers when the oil industry first developed. Others, by contrast, were highly industrialized and urbanized with educated populations and extensive mass media. Norway and Denmark, for instance, were already stable, industrialized democracies by the 1970s when North Sea oil came on line. As noted, such countries have shown no signs of sliding into autocracy as oil revenues have grown. Similarly, the prior industrialization of many Latin American countries may help explain why petroleum wealth there did not impede democratization.

In this regard, Russia looks like one of the oil producers least likely to fall victim to the curse. Although just a middle-income country, Russia was even more industrialized than many of the Latin American mineral-rich states when oil prices first spiked. Developed in the distinctive Soviet manner, it has rates of educational and scientific achievement more comparable to those of developed countries (see Table 3). Along with the other oil producers in the former Soviet Union, it has an unusually high rate of female labor participation. Maintaining political control over a literate, highly educated population rich in scientists, where women are integrated into the workforce, is bound to be more challenging than imposing an authoritarian regime on traditional communities of farmers and local traders.

Media Freedom

As already mentioned, Egorov et al. find a relationship between oil reserves and lower media freedom. Also noted, however, the effects of new reserves or increases in the oil price turn out to be small for countries that already had significant proven reserves. The implied effect for Russia was minimal.

Corruption

Finally, resource wealth is often thought to foster corruption, which might in

turn erode democracy or perpetuate dictatorship. Widespread graft is likely to discredit democratic officials and may make them eager to reduce governmental transparency. Steven Fish argues that this was a main reason for Russia's stalled democratization.[32]

Table 3: Some Characteristics of Leading Oil Producers, Averages for 2000 to 2008

Manufacturing, value added (% of GDP)		Services, value added (% of GDP)		Tertiary school enrollment, %		Scientific articles per million people		Researchers in R&D per million people		Labor force, female (% of total)	
Russia	**18.2**	Denmark	72.5	Norway	75.5	Denmark	918	Denmark	4721	Kazakhstan	49.4
Venezuela	18.0	Canada	66.0	Denmark	70.5	Canada	743	Norway	4571	**Russia**	**49.2**
Canada	17.5	**Russia**	**57.9**	**Russia**	**70.4**	Norway	717	Canada	3723	Norway	47.1
Turkmen.	16.2	Norway	57.3	Canada	60.6	**Russia**	**107**	**Russia**	**3340**	Turkmen.	46.8
Denmark	15.3	Kazakhstan	52.7	Libya	51.4	Kuwait	100	Kazakhstan	663	Denmark	46.7
Kazakhstan	14.5	Iran	46.9	Kazakhstan	43.9	UAE	49	Libya	361	Canada	46.3
Brunei	13.6	Kuwait	46.2	Venezuela	39.7	Oman	41	Brunei	279	Gabon	44.4
UAE	13.2	Trinidad	45.2	Bahrain	32.8	S. Arabia	26	Algeria	170	Trinidad	42.1
Iran	11.5	Venezuela	44.0	S. Arabia	25.7	Iran	24	Venezuela	150	Brunei	40.6
Norway	10.3	Oman	43.5	Iran	23.0	Venezuela	21	Kuwait	73	Venezuela	37.3
S. Arabia	9.7	UAE	42.9	UAE	21.9	Algeria	9	Qatar	n.a.	Eq. Guinea	33.6
Oman	7.6	S. Arabia	41.1	Algeria	20.0	Kazakhstan	7	Eq. Guinea	n.a.	Algeria	30.1
Eq. Guinea	7.1	Gabon	36.4	Kuwait	19.9	Qatar	n.a.	UAE	n.a.	Iran	28.3
Trinidad	6.9	Turkmen.	35.4	Oman	18.9	Brunei	n.a.	Trinidad	n.a.	Kuwait	23.1
Algeria	6.3	Brunei	32.5	Qatar	18.0	Eq. Guinea	n.a.	S. Arabia	n.a.	Libya	22.3
Gabon	4.3	Algeria	31.9	Brunei	14.4	Trinidad	n.a.	Oman	n.a.	Bahrain	21.0
Kuwait	2.6	Eq. Guinea	3.7	Trinidad	8.5	Libya	n.a.	Turkmen.	n.a.	Oman	17.3
Qatar	n.a.	Qatar	n.a.	Eq. Guinea	2.7	Turkmen.	n.a.	Bahrain	n.a.	S. Arabia	13.9
Libya	n.a.	Libya	n.a.	Gabon	n.a.	Bahrain	n.a.	Gabon	n.a.	UAE	13.5
Bahrain	n.a.	Bahrain	n.a.	Turkmen.	n.a.	Gabon	n.a.	Iran	n.a.	Qatar	12.7

Source: Adapted from Treisman, *The Return: Russia's Journey from Gorbachev to Medvedev*, (New York: Simon & Schuster, 2009); data from World Bank, World Development Indicators, 2009. "Leading oil producers": 20 countries with highest oil and gas income per capita, 2005.

Is there a relationship between oil income and corruption? Where oil and gas are abundant, corruption is *perceived* to be higher. Various scholars, using indexes of perceived corruption compiled by polling international businessmen and experts, have found a relationship between perceived corruption and natural resource wealth.[33] Oil-rich states such as Qatar and Equatorial Guinea are perceived to be considerably more corrupt than most others at their income level. Russia is perceived to be somewhat more corrupt than one would expect given its GDP per capita.

Perceptions are sensitive, however, to how countries are portrayed in the world media. Experts may reason backward; if they have come to associate oil rents with corruption, they may assume oil-rich states are corrupt. If belief in such an association becomes widespread, it may influence how journalists pick and frame the stories they report in oil-rich countries. One of my previous papers showed that measures of perceived corruption did not always coincide with measures of corruption based on surveys in which individuals or businesses were asked concrete ques-

tions like whether members of their family or "firms like theirs" had been expected to make unofficial payments during the previous year.[34] In the data from such experience-based surveys, evidence of a link between oil and higher corruption is far weaker, and often non-existent. For instance, using reports on the frequency of bribery from the World Bank's "World Business Environment Survey" (which surveyed firm managers) and Transparency International's "Global Corruption Barometer" survey (which interviewed individuals), little or no relationship was found, even controlling for income. In Russia, reports of bribery were not more frequent on average than in other countries around its income level.[35]

These surveys inevitably focus more on low-level corruption than on kleptocracy at the top. Low-level officials do not appear to be more corrupt in countries with oil wealth but the story might be different for government ministers. In Russia, as the oil price rose after 1999, stories circulated of brazen venality at the highest levels involving mind-boggling sums. Such stories may very well be true.[36] Unfortunately, there is little way to know—or to compare the scope of such corruption in Russia to that in other countries that lack oil. Nor is it clear whether or not corruption itself undermines democracy. There are some suggestive arguments to this effect but little empirical evidence to support them.

Conclusion

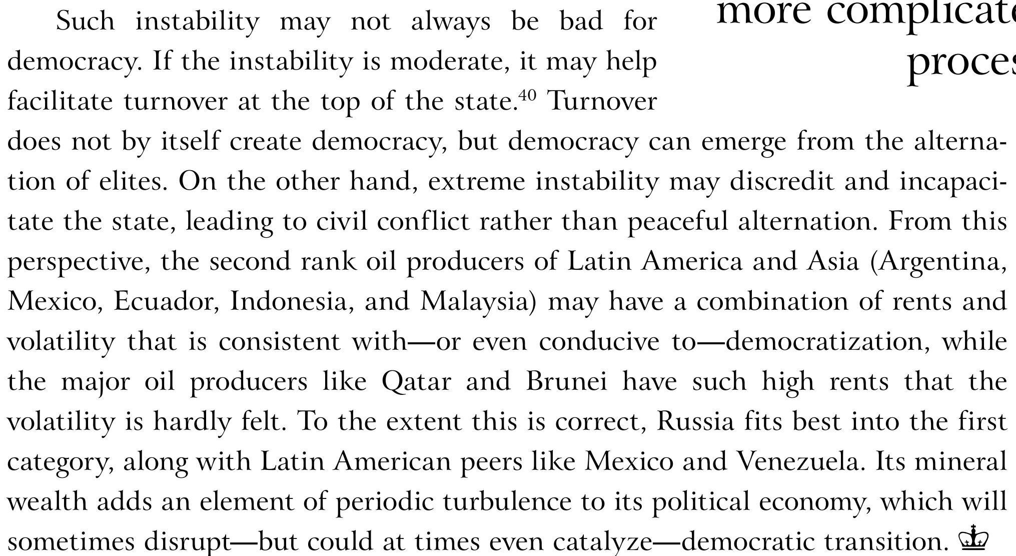
Russia's oil and gas income—even at the height of the recent price surge—was nowhere near enough to fund the kind of politically enervating welfare state found in the Persian Gulf. Much of the government's share of oil revenues still has to be extracted in the form of taxes from the private magnates who control most of the country's oil production. Unlike in Qatar or Kuwait, the Russian state will have to continue taxing the population and dealing with the discontent this engenders. Nor can Russia's oil preclude modernization since the country is in most ways already modernized. Rising oil prices since 1999 may have prompted a reduction in press freedom but, judging from experience elsewhere, only by a very small amount. Oil-rich states like Russia are perceived to be more corrupt than countries that lack oil. It is certainly possible that they are, but there is little reliable evidence to this effect.

If Russia's oil and gas do not doom the country to autocracy, they do, nevertheless, play a part in a more complicated process. Surging oil prices have in certain periods stimulated economic growth. As in many other countries, improving economic conditions buys the president greater popular support.[37] At moments of overwhelming popularity, a president has the opportunity to make significant changes to the system, pushing it toward either more or less democracy. President Putin, with an approval rating close to 80 percent, chose the latter. This was not

inevitable; had the Kremlin candidate in 2000 been a more committed democrat, one can imagine that the subsequent boom might have helped sustain support for further democratic reforms. At the same time, the price of oil, although important, was not the only determinant of Russia's growth rate. Studies suggest that higher oil prices explain between one-third and one-half of the total growth since 1999.[38] The impact of oil prices was apparently stronger from 2005 to 2009 than from 1999 to 2001 when growth was fueled by the effects of devaluation, and 2001 to 2004 when higher output of oil and minerals—mostly achieved by private companies—was at least as important as higher prices. Thus since 1999, the path from higher oil prices to weaker democracy in Russia has been somewhat indirect and contingent.

More generally, resource endowments have two effects. First, they may provide rents that, if controlled by the government, can be used for political purposes. Second, dependence on commodity exports subjects countries to sometimes extreme economic gyrations as the prices of commodities are more volatile than those of manufactured products and services.[39] In countries for which the rents are large relative to the volatility, natural resources may enable incumbent rulers to entrench themselves and avoid sharing power. In those for which the volatility is large relative to the rents, the main political consequence of resource dependence is likely to be not so much authoritarianism as instability.

> If Russia's oil and gas do not doom the country to autocracy, they do, nevertheless, play a part in a more complicated process.



Such instability may not always be bad for democracy. If the instability is moderate, it may help facilitate turnover at the top of the state.[40] Turnover does not by itself create democracy, but democracy can emerge from the alternation of elites. On the other hand, extreme instability may discredit and incapacitate the state, leading to civil conflict rather than peaceful alternation. From this perspective, the second rank oil producers of Latin America and Asia (Argentina, Mexico, Ecuador, Indonesia, and Malaysia) may have a combination of rents and volatility that is consistent with—or even conducive to—democratization, while the major oil producers like Qatar and Brunei have such high rents that the volatility is hardly felt. To the extent this is correct, Russia fits best into the first category, along with Latin American peers like Mexico and Venezuela. Its mineral wealth adds an element of periodic turbulence to its political economy, which will sometimes disrupt—but could at times even catalyze—democratic transition.

NOTES

[1] In fact, there are several resource curse arguments asserting respectively that resource wealth: (a) slows economic growth, (b) fosters civil wars, and (c) impairs the quality of governance and erodes democracy. I focus here exclusively on (c).

[2] Moisés Naím, "Russia's Oily Future: Overcoming geology, not ideology, will become Moscow's greatest challenge," *Foreign Policy*, January/February 2004, 94-5.

[3] Thomas L. Friedman, "The First Law of Petropolitics," *Foreign Policy*, May-June, 2006, 28-36.

[4] Yegor Gaidar and Antonia W. Bouis, *Collapse of an Empire: Lessons for Modern Russia* (Washington, DC: Brookings Institution Press, 2007).

[5] An excellent manuscript that reaches a positive conclusion is Michael Ross, ("Oil and democracy revisited," UCLA: 2009). A revised version of this paper will appear as a chapter in Ross's forthcoming book, *The Curse of Oil Wealth*. A skeptical reading of the evidence appears in Stephen Haber and Victor Menaldo, ("Do natural resources fuel authoritarianism? A reappraisal of the Resource Curse," Stanford: May 2009)

[6] The data come from Michael Ross, Database on oil and gas income, 2009, UCLA. I am grateful to Ross for sharing this. The income data are constructed from the reported physical quantities of oil and gas produced, which are then multiplied by the average world price for these commodities. No adjustment is made for production costs. Thus, the data represent potential receipts (if all oil and gas were sold at world market prices), not profits. So long as the physical quantities are reported accurately, the estimates are not vulnerable to distortions generated by transfer pricing, cost inflation, and other deceptive accounting. Clifford Gaddy and Barry Ickes ("Resource Rents and the Russian Economy," *Eurasian Geography and Economics*, 46 no. 8 (2005), 559-583) argue that such tricks often lead to underestimation of the rents from oil and gas in Russia.

[7] Polity IV Project. CIA. 16 February 2010, http://www.systemicpeace.org/polity/polity4.htm.

[8] Ross ("Oil and Democracy Revisited") finds, for instance, that greater oil and gas income is not associated with a greater chance of democratic failure in countries with income per capita above $5,000.

[9] Thad Dunning, *Crude Democracy: Natural Resource Wealth and Political Regimes* (New York: Cambridge University Press, 2008). See also Ross, "Oil and Democracy Revisited," 8-9.

[10] Nathan Jensen and Leonard Wantchekon, "Resource Wealth and Political Regimes in Africa," *Comparative Political Studies*, 37 no. 7 (2004), 816-841.

[11] See Ross, "Oil and Democracy Revisited"; Daron Acemoglu, Simon Johnson, James Robinson, and Pierre Yared, "Income and Democracy," *American Economic Review* 98 no. 3 (2008), 808-842.

[12] It could be, however, that the fixed effect regressions underestimate the impact of changes in oil and gas income on democracy in Muslim countries because a good number of the major Muslim oil producers were at the bottom of Polity's scale, with nowhere further to drop.

[13] Michael L. Ross, "Does Oil Hinder Democracy?," *World Politics* 53, no. 3 (April 2001), 332-333.

[14] Silje Aslaksen, "Oil and Democracy—More than a Cross-Country Correlation?" *Journal of Peace Research*, forthcoming

[15] Georgy Egorov, Sergei Guriev, and Konstantin Sonin, "Why Resource-Poor Dictators Allow Freer Media: Theory and Evidence from Panel Data," *American Political Science Review* 103, no. 4 (Nov 2009), 645-668.

[16] The coefficient, -2.87, comes from a model in which the media freedom index is regressed on the log of oil reserves multiplied by the world oil price, controlling for log of GDP per capita, log of population, and log of government expenditure as a share of GDP. The regression is run on countries classified as "non-democracies"—i.e. with Polity scores below six. Of course, press freedom is just one element concomitant to democracy; if oil affects other aspects of democracy in parallel, the total effect would be greater. Unlike Polity, which did not record deterioration in Russia's democracy until 2007, the Freedom House media index recorded a sharp drop in freedom starting from 1999. For a skeptical view of Freedom House's ratings, for instance its equation of press freedom in Russia to that in Yemen, see Daniel Treisman, "The Return: Russia's Journey from Gorbachev to Medvedev" (forthcoming book, New York: Free Press, 2010).

[17] World Bank, "World Development Indicators" (Washington, DC: World Bank, 2009).

[18] Mehran Kamrava, "Royal Factionalism and Political Liberalization in Qatar," *The Middle East Journal* 63, no. 3 (2009), 401-20.

[19] Calculated from Michael Ross, Database on oil and gas income, 2009, UCLA.

[20] Revenues from fuel exports in 2006 came to about $31 billion; government expenditures, to about $14 billion (calculated from World Bank, World Development Indicators [Washington, DC: World Bank 2009]).

[21] Charles McPherson, "National Oil Companies: Evolution, Issues, Outlook," (workshop, Washington, DC: World Bank, May 2003), 3.

[22] Pauline Jones Luong and Erika Weinthal, "Rethinking the Resource Curse: Ownership Structure, Institutional Capacity, and Domestic Constraints," *Annual Review of Political Science* 9, (June 2006), 241-63. Luong and Weinthal argue that the weak institutions associated with resource wealth should "instead be attributed to the pathologies associated with state ownership" (Ibid., 246). When resource sectors are predominantly privately owned, there are incentives for the creation of strong institutions.

[23] Much of Russia's oil and gas is sold domestically, at prices that have been far below world prices in the past.

[24] Fuel export revenues calculated from World Bank, World Development Indicators (Washington, DC: World Bank,2009).

[25] Calculated from OECD, "Economic Survey: Russian Federation" (Paris: OECD, 2009), 55; J.E. Peterson, "Life after oil: economic alternatives for the Arab Gulf states," *Mediterranean Quarterly* 20 (2009), 3.

[26] Philip Hanson, "The Resistible Rise of State Control in the Russian Oil Industry," *Eurasian Geography and Economics* 50, no. 1 (2009), 15; OECD, "Economic Survey of the Russian Federation", (Paris: OECD, 2006), 38; Peter Rutland, "Putin's Economic Record: Is the Oil Boom Sustainable?" *Europe-Asia Studies* 60, no. 6 (2008), 1051-72. Rutland points out that not only does Russia have a sizeable private oil sector, but it also has competition among its domestic oil producers.

[27] Of course, private ownership means a great deal more when property rights are secure. In Russia, the owners of private oil companies rely on connections to those in high office to prevent predatory interventions. Minority shareholders in Gazprom understand very well that decisions on corporate strategy are made by the government. Still, a game with two sides in which one side is weak is different from a game with just one side. Were the incumbent political team to weaken, magnates controlling large concentrations of private wealth could reconsider their allegiances. Another point to note is that ownership of the oil industry is endogenous. As Guriev, Kolotilin, and Sonin show, state expropriations of oil companies tend to increase when the oil price is high. Sergei Guriev, Anton Kolotilin, and Konstantin Sonin, *Determinants of Expropriation in the Oil Sector: A Theory and Evidence from Panel Data* (Moscow: New Economic School, 2008).

[28] Calculated from Goskomstat RF, *Rossiisky statistichesky yezhegodnik*, 2008. See also William Tompson, "A Frozen Venezuela? The 'Resource Curse' and Russian Politics," (Organisation for Economic Cooperation and Development, Paris: 2005).

[29] David L. Cingranelli and David L. Richards, "Cingranelli-Richards (CIRI) Human Rights Dataset 2008", www.humanrightsdata.org.

[30] Ross, "Oil and Democracy Revisited".

[31] One can define modernization to include not just industrialization but also the development of high quality institutions, but then it becomes almost tautological to say that modernization leads to democracy. I defer discussion of the quality of institutions to the section titled "Corruption.".

[32] M. Steven Fish, *Democracy Derailed in Russia: The Failure of Open Politics*, (New York: Cambridge University Press, 2005), 133-4.

[33] The first study to find this was Alberto Ades and Rafael Di Tella, "Rents, Competition, and Corruption," *American Economic Review*, 89, no. 4 (September 1999), 982-993.

[34] Daniel Treisman, "What Have We Learned about the Causes of Corruption from Ten Years of Cross-National Empirical Research?" *Annual Review of Political Science*, 10 (June 2007), 211-44.

[35] It is possible that there is underreporting of corruption in surveys that ask about respondents'

direct experience. Many surveys seek to avoid alarming respondents by asking about bribery in "firms like yours" rather than in the respondent's own enterprise. Such underreporting would only bias estimates if underreporting were greater in countries with natural resources than in those without. It is not obvious why that should be the case.

[36] One possible indirect indicator reported in the Russian press is the frequency with which top officials are observed wearing watches that cost tens of thousands of dollars. Prime Minister Putin has been photographed wearing a Patek Philippe watch that retails for about $60,000 ("*Starinnye chasy yeshche idut*," Russky Newsweek, (14 February 2005). Unfortunately, there are no time series datasets on this variable.

[37] Daniel Treisman, ("Presidential Popularity in a Young Democracy: Russia under Yeltsin and Putin," UCLA: November 2009). This paragraph draws on my forthcoming book *The Return: Russia's Journey from Gorbachev to Medvedev*.

[38] Suni Paavo, "Oil Prices and the Russian Economy: Some Simulation Studies with NiGEM," (Discussion Papers no. 1088, Research Institute of the Finnish Economy, Helsinki: 2007), 12-13. estimating that higher oil prices explain about 2.5 points (38 percent) of the 6.5 percent average growth rate in 2001-06. Roland Beck, Annette Kamps, and Elitza Mileva, "Long-term Growth Prospects for the Russian Economy," (Occasional Paper Series no. 58, European Central Bank, Frankfurt: 2007), 9, reviewing previous studies, note estimated long-run elasticities of GDP to permanent increases in the oil price of .15 to .20. Using the monthly prices of European Brent oil, these elasticities imply that the change in oil prices in 1999-2007 can explain 25 to 33 points of the 72 percent increase in GDP (measured in constant rubles) between those years—or, in other words, 35 to 46 percent of the total growth.

[39] David S. Jacks, Kevin H. O'Rourke and Jeffrey G. Williamson, "Commodity Price Volatility and World Market Integration since 1700, " (NBER Working Paper Series no. 14748, Cambridge, MA: 2009), 3-4.

[40] If dependence is only moderate, however, the incumbents may be able to shield themselves from political instability by saving significant oil revenues in reserve funds—as Russia has done—and using these funds to cushion price shocks. The effectiveness of such a strategy obviously depends on how great the price volatility is and how long the shocks last.