The Resource Curse: A Corporate Transparency Channel*

Art Durnev Sergei Guriev

November 27, 2007

Abstract

We propose and investigate a new channel through which the resource curse - a stylized fact that countries rich in natural resources grow slower - operates. Predatory governments are more likely to expropriate corporate profits in natural resource industries when the price of resources is higher. Corporations whose profits are more dependent on the price of resources can mitigate the risk of expropriation by reducing corporate transparency. Lower transparency, in turn, leads to inefficient capital allocation and slower economic growth. Using a panel of 72 industries from 51 countries over 16 years, we demonstrate that the negative effect of expropriation risk on corporate transparency is stronger for industries that are especially vulnerable to expropriation, in particular, for industries whose profits are highly correlated with oil prices. Controlling for country, year, and industry fixed effects, we find that corporate transparency is lower in more oil price-dependent industries when the price of oil is high and property rights are poorly protected. Furthermore, corporate growth is hampered in oil price-sensitive industries because of less efficient capital allocation driven by adverse effects of lower transparency.

JEL classification: G18 (Government Policy and Regulation), L7 (Industry Studies: Primary Products and Construction), G15 (International Financial Markets), G38 (Government Policy and Regulation), K42 (Illegal Behavior and Enforcement of Law), O43 (Institutions and Growth)

Keywords: Resource Curse, Oil Reserves, Expropriation, Autocracy, Transparency and Disclosure, Investment Efficiency, Industry Growth

---

Art Durnev, Assistant Professor of Finance, Desautels Faculty of Management, McGill University, 1001 Sherbrooke Street West, Montreal, Quebec H3A 1G5, Canada. Tel: (514) 398-5394. Fax (514) 398-3876. Email: art.durnev@mcgill.ca.

Sergei Guriev, Associate Professor of Economics, New Economic School and CEPR, Nakhimovsky pr. 47, Moscow 117418 Russia. Email: sguriev@nes.ru.

We are grateful to Craig Pirrong and Bernard Yeung for helpful comments and suggestions. Art Durnev's research is supported by the Institut de Finance Mathématique de Montréal (IFM2) and the Social Sciences & Humanities Research Council of Canada (SSHRC). We thank Pat Akey for superb research assistance.

Introduction

> *In those unfortunate countries, indeed, where men are continually afraid of the violence of their superiors, they frequently bury and conceal a great part of their [capital] stock.*
>
> *Adam Smith (1776).*
> *An Inquiry into the Nature and Causes of the Wealth of Nations.*

Why are some nations rich and others poor? Why have some poor countries managed to catch up with rich countries within one generation's lifetime, and others have lagged behind even further? Paradoxically, the most successful post-war development examples have taken place in countries that were poor in natural resources (e.g., The Asian tigers) while most resource-rich countries (e.g., those in Sub-Saharan Africa, Middle East, and Latin America) have failed to close the gap with the OECD economies.

The fact that resource abundance negatively affects economic growth in standard growth regressions was first documented by Sachs and Warner (1997) and has become known subsequently as the "resource curse". Recent literature (Lane and Tornell, 1996, Ades and Di Tella, 1999, Auty, 2001, Robinson, Torvik, and Verdier, 2006, Mehlum, Moene, and Torvik, 2006, Caselli, 2006, Hodler, 2006, and Boschini et al., 2006) demonstrates that the resource curse is related to the deterioration of economic and political institutions. In particular, if resources are discovered in an economy with immature institutions, the resulting rent-seeking slows down or even reverses institutional development, which in turn, negatively affects growth. This literature provides evidence on the interaction between resource abundance and institutions using country-level data on economic growth. Nevertheless, it is hard to identify the specific channels through which this resource curse works. By definition, institutions change slowly so that isolating the effects of particular institutions requires very long-term data.

In order to understand the mechanism of the resource curse, one needs to use microeconomic data. In this paper, we study the effect of the resource abundance on corporate finance and corporate performance using industry-level panel from 51 countries over the period of 1990-2005. We argue that in countries with poor institutions, governments are more inclined to expropriate natural-resource rents. This makes firms

operating in natural resource sectors especially vulnerable to expropriation and provides them with incentives to withhold or manipulate information about their performance. The lower transparency, in turn, leads to worse capital allocation and slower economic growth.

We propose a simple theory based on the idea that, during the periods of high commodity prices, corporate profits in the natural resource industries represent rents that are relatively easy for governments to capture. Firms in such industries face a trade-off. On the one hand, in order to attract external capital, they need to be transparent. On the other hand, higher transparency involves a risk of expropriation by the government or other potential predators, such as rival companies.[1] As argued by Watts and Zimmerman (1986), Friedman et al. (2000), and Stulz (2005), transparency with respect to corporate profits can attract various forms of government expropriation, such as the solicitation of bribes, overregulation, confiscatory taxation, and the outright seizure of firm assets. Transparency would therefore be lower in industries that are more vulnerable to expropriation, particularly in countries that have poor protection of property rights.

Consistent with the existing resource curse literature, this argument is especially important for oil companies. The quintessential example is the story of Yukos, once Russia's largest and most transparent oil company and once Russia's richest person Mikhail Khodorkovsky. Khodorkovsky and his partners acquired their stake in a notorious loans-for-shares auction and then diluted the stakes of other shareholders including foreign investors and the government (Freeland, 2000, Boone and Rodionov, 2002). Once they assumed control over the majority of voting and cash flow rights, the firm's transparency and corporate governance improved substantially. Khodorkovsky was the first of Russian oligarchs to disclose his personal stake in a major company and to invite reputable foreigners to join his corporate board. This raised Yukos market capitalization fifteen-fold in less than four years but also eventually resulted in the full expropriation by the government and imprisonment and exile of the key owners and

[1] Hereinafter we consider expropriation by a predatory government. However, our analysis goes through if expropriation is conducted by competitors or other private entities.

managers. While the official charges against Khodorkovsky were related to tax fraud, there is a widespread belief that the government's assault was driven by a combination of his political ambitions and the firm's openness about its high value. As a member of Russian parliament and a former colleague of Khodorkovsky said,

"The real threat that Khodorkovsky posed was that Khodorkovsky had become the most independent businessman in the country. He created what others had failed to create: a transparent, Western-style-of-management company which already had a positive international image ... and if 20% of this new company would have been sold to a Western company, the independence of Khodorkovsky from the authorities would have been fortified to a very great degree. And it's clear the authorities were not comfortable with that idea."

Aleksei Kondaurov, Los Angeles Times December 19, 2004

The lessons from the Yukos affair were immediately learned by other Russian oil companies. As one of the harshest critics of Khodorkovsky (William Browder, the head of the Hermitage Capital Mutual Fund in Russia) acknowledged in the aftermath of the Yukos affair: "… *the threat of nationalization is forcing companies to go backward with their corporate governance."*[2] Goriaev and Sonin (2006) document that investors perceived the attacks on Yukos as a strong signal that the state would expropriate other companies as well. They show that the reaction to the Yukos affair was more negative for the stocks of more transparent companies than for those of less transparent ones.

The Yukos affair was certainly not an isolated case and its relevance goes well beyond Russia. By studying 80 oil nationalizations that have occurred in 1955-2003 around the world, Kolotilin (2007) shows that oil companies are more likely to be expropriated by governments in countries with imperfect institutions; the risk of nationalization is especially large when oil prices are high (even controlling for country fixed effects). Similar logic drove the famous expropriations of oil companies outside the 1959-2003 period: *Expropiación Petrolera* in Mexico in 1935, and recent nationalizations in Venezuela, Bolivia, Ecuador, and Russia.

As shown in Figure 1, companies around the world respond to government predation with lower corporate transparency. In Figure 1, we plot country-level

[2] Russia Profile Magazine, March 2007, p. 37, quoting William Browder.

differential opacity of firms that belong to the oil and gas extraction industry versus country predation index (both variables defined in detail later). The differential opacity is defined as country median opacity of firms that belong to the oil and gas industry minus country median opacity of all other firms. In most countries (26 out of 31), firms in the oil and gas industry are more opaque relative to all other firms (differential opacity is positive). More interestingly, differential opacity of oil and gas industries is generally larger in more predatory countries. The correlation coefficient between the two variables is 0.42 with *p-value* = 0.02.

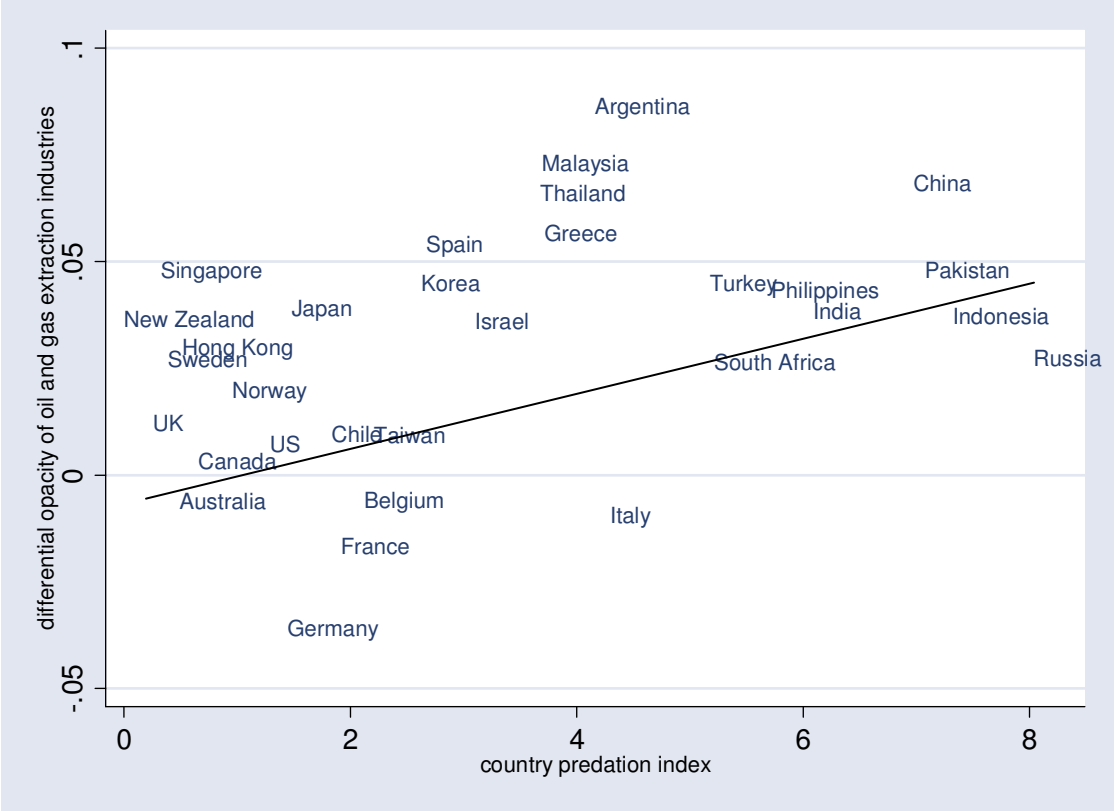

Figure 1: Differential opacity of oil and gas extraction industries relative to other industries plotted against country predation index.
Differential aggregate opacity is the difference between median opacity (across firms and years from 1990 through 2005) of firms that belong to industries with SIC = 13 (oil and gas extraction) and the median aggregate opacity of all other firms. Opacity is defined in Table II. The intercept and the slope of the line are determined by the following OLS regression: Differential opacity = -0.0198 + 0.00579 × Predation index (*p-value* = 0.02; R^2 = 0.17; Number of countries = 31).

In order to provide econometric support for our argument, we apply the approach introduced by Rajan and Zingales (1998) who studied the effect of financial dependence on growth. Rajan and Zingales ranked industries by the degree of financial dependence (using data from the U.S., arguably the most developed financial market) and then studied growth of industries in different countries depending on countries' financial development and industries' financial dependence. Similarly, we test whether the industries that are more vulnerable to government expropriation have lower transparency levels in countries with worse institutional development. Since we include both country and industry fixed effects in all our regressions, we essentially focus on a within-country variation in opacity induced by government rent-seeking.[3] This approach mitigates the bias induced by endogeneity, omitted variables, and model misspecification.

In order to conduct this test, we need proxies for opacity, oil price sensitivity, and government predation. Let us first describe our approach to measuring opacity. Managers can use different strategies to influence the accuracy of information about their company's performance. Profitable firms may limit the amount of information disclosed in their financial statements or simply disclose false information (see, e.g., Schipper, 1989, Shivakumar, 2000, and Chaney, Faccio, and Parsley, 2007). Alternatively, the managers can manipulate the precision of information through trading (Aggarwal and Wu, 2006). For example, the managers can depress stock prices of a profitable company by placing a large sell order of the company's stock. Furthermore, the managers can obfuscate company true prospects by passing false information to investors and market professionals. In measuring corporate opacity, we thus try to account for different ways that information disclosure can be manipulated. The analysis in our paper requires the construction of opacity measures which vary through time, so, we rely on firm accounting and market data that provide such variation. Our main variable is the aggregate opacity index, which consists of three components: accounting

[3] This approach also helps us interpret the impact of political variables, such as party orientation. For example, the policies of left parties in developed countries may be less predatory than the policies of right parties in developing countries. This does not cause problems in our statistical analysis because we compare the impact of political variables on opacity within countries.

opacity, insider opacity, and informational opacity. The accounting opacity component reflects the quality of reported earnings in firms' financial statements since managers often manage reported earnings to hide or obscure information. The second component of the opacity index, insider opacity, is based on a dynamic return-volume relationship, and it reflects the degree of informational asymmetry associated with a company. The third component, informational opacity, tracks the aggregate amount of firm-specific information contained in stock prices. The opacity variables are based on the accounting and financial data, and thus they do not reflect the exact mechanisms employed by the managers, but rather they can be viewed as aggregate opacity induced by information manipulation and withholding.[4]

In order to find a proxy for the vulnerability of an industry to expropriation, we disentangle industry profitability into two parts: a part driven by luck such as by oil prices and a part determined by skill, such as managerial foresight or efficient operations. We conjecture that it is easier for governments to expropriate from a company whose profits are related more to exogenous economic conditions, such as high oil prices, rather than managers' expertise or effort. Thus we use the sensitivity of industry profits with respect to oil prices as a proxy for the expropriation risk. To measure the sensitivity to oil prices, we use the U.S. data (and then exclude the U.S. from further tests). As a check for robustness, we also use a dummy variable for the oil and gas extraction industry to proxy for the risk of expropriation. We assume that expropriation risk is larger for firms that belong to this industry. We also redo the entire whole analysis replacing oil prices with the prices of other commodities and composite commodity price index.

We use three proxies for countries' degree of predation. First, we construct a predation index that encompasses information on countries' rule of law, risk of government expropriation, corruption in the government, quality of bureaucracy, regulation of competition, etc. Second, we use the autocracy and democracy indices to

[4] Using direct measures of information disclosure, such as the number of items disclosed in firms' financial statements, is not suitable. There is no guarantee that companies disclose information truthfully.

measure the political constraints imposed on governments. Buchanan and Tullock (1962), Botero et al. (2004), and Djankov et al. (2002) argue that members of autocratic governments are less constrained than the democratic ones, and thus they are more likely to pursue rent-seeking. Third, we apply information on party orientation of government chief executives (left versus right). Botero et al. (2002) find that political power of the leftist governments is associated with more redistributive policies at the expense of public companies.

Our main empirical finding is that more expropriation-susceptible industries are less transparent when governments are more predatory. The adverse effect of predation is larger during periods of high oil prices or in countries abundant with oil reserves. We also observe that the constraints on chief government executives (measured by the degree of autocracy) and major party orientation (left versus right) matter. Specifically, opacity increases when a government is more autocratic or when it favors redistributive policies as measured by leftist party orientation. The opacity also increases during election years reflecting the increased uncertainty about future government policies.[5]

Next, we turn our attention to the economic growth implications of lower transparency. Economic growth requires efficient allocation of capital. There is growing empirical evidence that more developed and more informational-rich financial markets are a necessary condition for efficient capital allocation (Durnev, Morck, Yeung (2004) and Wurgler, 2000). Following Wurgler (2000) we use the elasticity of investment with respect to value-added as a measure of capital allocation efficiency. Consistent with the resource curse argument, capital allocation is indeed less efficient in oil-sensitive industries located in countries with more predatory or autocratic governments. We also show that such industries grow slower.

Our results are economically significant. Consider a country with a high degree of government predation, Venezuela, and compare it to Norway – a country where property rights are well protected. The oil and gas extraction industry in Venezuela

[5] There might be a reverse causality problem between opacity and country predation. Using information on election years, which are exogenous in most countries, partially mitigates this concern. Dinç (2005) uses a similar approach to study the lending patterns of state-owned banks during election years.

would grow slower by 1.3% per annum compared to the agriculture industry. On the other hand, in Norway, the differential growth rate between the oil and gas industry and the agriculture would be close to zero.

The paper proceeds as follows. Section I presents a simple model of disclosure under the threat of government's expropriation and derives empirical predictions. In Section II, we describe the empirical methodology, the data, and the variables. Section III provides the analysis of how predation affects opacity of expropriation-vulnerable industries. Section IV presents capital allocation and industry growth results. In Section V, we discuss alternative interpretations of our findings and provide robustness checks. In Section VI, we discuss related literature. Section VII concludes.

II. A Model of Disclosure under Government Expropriation

To provide basic intuition behind our arguments, we present a stylized model of disclosure under a threat of government capture.

A. The Setting

We consider a simple illustrative model of disclosure along the lines of Verrecchia (2001). We assume that there is a distribution of firms, a government, and investors. Each firm has a project that generates earnings π. The earnings π are uniformly distributed on $[\underline{\pi}, \overline{\pi}]$ so that the cumulative distribution function is $F(\pi)=(\pi-\underline{\pi})/(\overline{\pi}-\underline{\pi})$. Each firm needs to raise I dollars to finance the project. Firms act in the interest of the original shareholders.

Each firm may disclose its earnings at a fixed cost C. This cost covers the resources spent to verify the earnings to the outsiders, for example the cost of hiring auditors. Investors are perfectly competitive, their time preference is normalized to 1, and they price equity based on all relevant information. In particular, if the earnings π are disclosed then the firm should issue I/π shares to raise I dollars. If the earnings are not disclosed, investors calculate the expected earnings of the firm given the equilibrium

decisions to disclose. For example, if investors know that all firms with $\pi > \pi^*$ disclose and others hide, the price of equity without disclosure is $E(\pi \mid \pi < \pi^*) = (\underline{\pi} + \pi^*)/2$.

The government obtains the same information as the investors do. Government can expropriate a share x of the profits at a cost $x^2/(2P)$, where P is the proxy for the degree of predation for a given industry in a given country. The index P is high in industries and countries in which it is easier to expropriate firms' profits. For example, in high-technology industries based on (inalienable) human capital, expropriation is costly (P is low); in natural resource industries, rents are easier to capture (P is high). Similarly, in countries where property rights are better protected, predation is lower (P is low).

We assume that $P < 1/\overline{\pi}$ so that the level of expropriation x is always between 0 and 1. We also assume that technical costs of disclosure are sufficiently low, $C + P\ \overline{\pi}\ (\overline{\pi} - \underline{\pi}) < I\ (\overline{\pi} - \underline{\pi}) / (\overline{\pi} + \underline{\pi})$. It allows us to focus on the most interesting equilibrium, where some firms disclose in equilibrium and others do not.

The timing is as follows. In period 0, firms learn their profits π and choose whether to disclose. In period 1, investors observe the disclosed profits and buy the issued equity. The government observes the disclosed profits and chooses the level of expropriation x in period 2. In period 3, firms pay out dividends and get liquidated. Figure 2 summarizes the timing of the model.

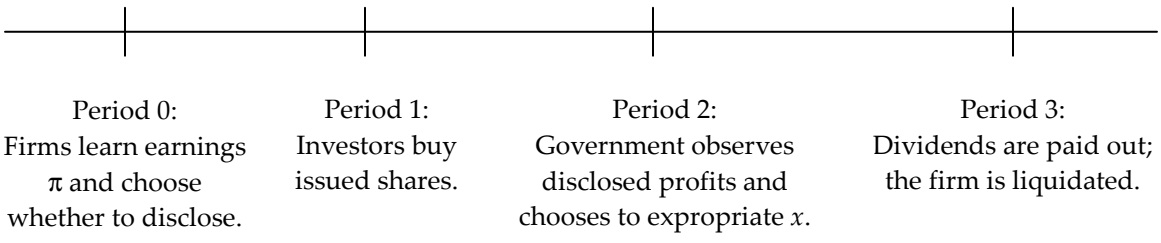

Figure 2: Timing of the model.

B. Equilibrium and Model Predictions

We consider the equilibrium where there exists such $\pi^* \in [\underline{\pi}, \overline{\pi}]$ that all firms with $\pi > \pi^*$ disclose and others hide. As we show later, the above assumptions imply that this equilibrium exists and there are no other equilibria.

Let us first consider the firms that choose to disclose. If the government observes a disclosed π, it chooses the level of expropriation x to maximize $x\pi - x^2/(2P)$. The optimal expropriation is then $x = \pi P$. Similarly, investors observe disclosed earnings and therefore buy I/π shares at the fair price π. The firm's payoff is then equal to

$$-C + \pi - x\pi - \pi I/\pi = -C + \pi - P\pi^2 - I\,. \qquad (1)$$

Now consider the firms that do not disclose. The government expects to get $x\ E(\pi \mid \pi < \pi^*) - x^2/(2P)$. Therefore the level of expropriation is $x = P\ E(\pi \mid \pi < \pi^*) = P\ (\underline{\pi} + \pi^*)/2$. Investors also value these firms at $E(\pi \mid \pi < \pi^*) = (\underline{\pi} + \pi^*)/2$, so the firm issues $2I / (\underline{\pi} + \pi^*)$ shares. The firm's payoff is therefore $\pi - \pi\ P(\underline{\pi} + \pi^*)/2 - 2\pi I / (\underline{\pi} + \pi^*)$. Comparing the payoffs when firms disclose with profits when firms do not disclose, the cut-off equilibrium earnings π^* solve the following equation

$$C + P\pi^*(\pi^* - \underline{\pi}) = I\ (\pi^* - \underline{\pi}) / (\pi^* + \underline{\pi})\,. \qquad (2)$$

This equation has at most two roots $\pi^* > \underline{\pi}$, and the assumptions above assure that only the smaller one lies below $\overline{\pi}$. (Even if assumptions did not hold we would consider the smaller root anyway as the larger one would not satisfy the second-order condition.)

Figure 3 illustrates the solution to (2); the figure plots the left- and right-hand sides of the equation (2) as a function of the share of firms that hide $F(\pi^*)=(\pi^* - \underline{\pi}) / (\overline{\pi} - \underline{\pi})$ which is a linear transformation of π^*. The left-hand side of the equation (2) is the cost of disclosure (technical costs C plus costs proportional to expropriation P). The right hand-side captures the benefits of disclosure that are proportional to the need for external financing I. The cost curve is convex and starts at the point (0, C). The benefits curve is concave and goes through the points (0, 0) and (∞, I).

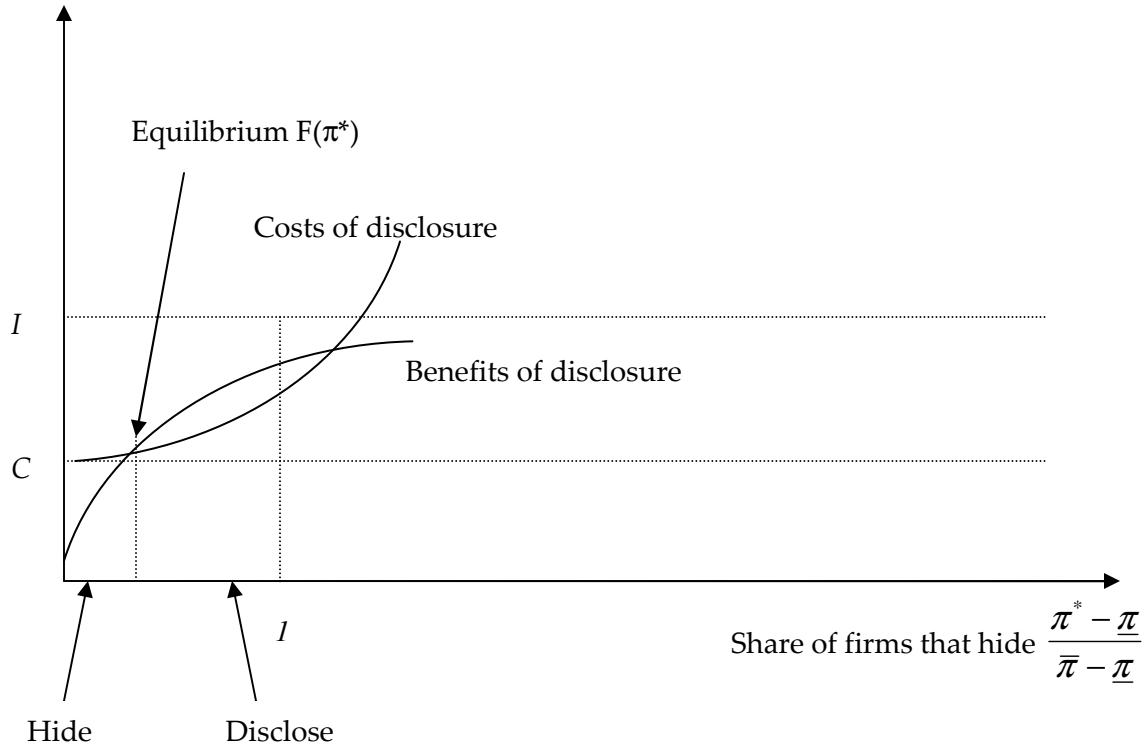

Figure 3: Graphical representation of equation (2).
The "Cost of disclosure" it the left-hand side of the equation (2), and the "Benefits of disclosure" is its right-hand side of (2).

Let us now study the effect of predation *P* and financial dependence *I* on the degree of opacity in the industry (proxied by the number of firms that hide $F(\pi^*)$). Proposition 1 describes the comparative statics.

Proposition 1. *Under the assumptions above there exists a unique equilibrium with the following properties. There is such* $\pi^* \in [\underline{\pi}, \overline{\pi}]$ *that* π^* *solves equation (2), all firms with* $\pi > \pi^*$ *disclose and all firms with* $\pi \leq \pi^*$ *hide. The equilibrium has the following comparative statics: the level of opacity* $F(\pi^*)$ *increases in predation cost P, cost of disclosure C and decreases in external financing needs I. Moreover, the effect of predation P on opacity* $F(\pi^*)$ *decreases in I. If both* $\underline{\pi}$ *and* $\overline{\pi}$ *increase by the same amount, opacity increases.*

The Proposition is intuitive and can be understood in terms of Figure 3. Indeed, as the level of predation *P* or the technical cost of disclosure *C* increase, the costs of disclosure curve shifts up, the equilibrium level of π^* goes up, and opacity increases. As the financial dependence *I* increases, the benefits curve moves up, equilibrium π^* goes down and opacity decreases.

The interaction between the effects of the financial dependence *I* and of predation *P* is also clear: if *P* increases, the effect of *P* on opacity π^* is large whenever the "benefits of disclosure" curve lies low (low *I*).

The last result helps us understand the effect of oil price on the oil industry and other oil-dependent industries. If a positive shock uniformly raises profits of all firms in the industry, the government has stronger incentives to expropriate, and firms respond by becoming more opaque. Indeed, if both $\underline{\pi}$ and $\overline{\pi}$ increase by the same amount, the cost of disclosure goes up and benefits of disclosure go down, so the equilibrium level of opacity $F(\pi^*)$ increases.

Based on Proposition 1, we obtain the following empirical predictions. Industries that are more vulnerable to government expropriation are more opaque while the industries that are more financially-dependent should be more transparent. The effect of government expropriation on opaqueness should be especially strong in the industries that are less financially dependent. Most importantly, a positive profit shock (such as a higher oil price for oil-dependent industries) results in a higher expropriation risk and therefore lower transparency.

III. Empirical Setup and Variables

A. Empirical Specifications

A simple cross-sectional comparison of the opacity levels across industries or countries would suffer from a number of econometric problems, such as omitted variables, model misspecification, and endogeneity. To test our hypotheses, we apply the methodology similar to that in Rajan and Zingales (1998) using a panel of industry-country-year data. The regressions include interaction effects between industrial vulnerability to

expropriation, proxies for government predation in a given country, oil prices or country oil reserves, and fixed effects for industries, countries, and years. The main advantage of this methodology is that by controlling for country, industry, and time fixed effects, we mitigate the problem of omitted variables bias or model specification, which can afflict cross-country or cross-industry regressions. Essentially, we make predictions about within-country, across-industries, and through-time differences in industry opacity levels based on interactions between industry risk of expropriation, country oil price, and country proxies for predation.

Our basic regressions are as follows:

$$\begin{aligned} OPACITY_{j,t}^{c} = {} & \alpha_j + \delta_c + \eta_t \\ & + \beta_1 EXPR_{j,t} \times OIL\_PRICE_t \times PREDATION_t^c \\ & + \beta_2 EXPR_{j,t} \times OIL\_PRICE_t + \beta_3 EXPR_{j,t} \times PREDATION_t^c + \beta_4 OIL\_PRICE_t \times PREDATION_t^c \\ & + \beta_5 PREDATION_t^c \\ & + \gamma' CONTROLS_{j,t}^c + \varepsilon_{j,t}^c \end{aligned} \quad . \qquad (3)$$

where j indexes industries, c indexes countries, and t indexes time. All regressions include industry fixed effects (α_j), country fixed effects (δ_c), and year fixed effects (η_t). The dependent variable, $OPACITY_{j,t}^{c}$, is opacity of industry j from country c in year t.

The independent variables include a triple interaction term between industry expropriation vulnerability, oil price-dependency, the natural log of oil price, and predation index ($EXPR_{j,t} \times OIL\_PRICE_t \times PREDATION_t^c$). After controlling for fixed effects, the main coefficient of interest coefficient (β_1) measures the incremental increase in opacity given a unit increase in expropriation risk, the change in oil price and country predation. Our model in the previous section implies that the risk of expropriation is higher when government is predatory (higher $PREDATION_t^c$, a proxy for P), and when the corporate profits or rents are high (higher $EXPR_{j,t} \times OIL\_PRICE_t$, a proxy for an upward shift in both $\underline{\pi}$ and $\overline{\pi}$); therefore the coefficient β_1 should be positive and significant.[6]

[6] We replace the predation index with the autocracy variable in some of the specifications.

The double interaction effects ($EXPR_{j,t} \times OIL\_PRICE_t$, $EXPR_{j,t} \times PREDATION_t^c$, and $OIL\_PRICE_t \times PREDATION_t^c$), and $PREDATION_t^c$ are also controlled for to account for independent effects of these measures on opacity. Control variables include the need for external financing ($EXT\_FIN_{j,t}$) and the interaction term of the need for external financing with predation ($EXT\_FIN_{j,t} \times PREDATION_t^c$).

As oil price is the same for all countries and industries in a given year, it may capture the effect of the time dummies. In order to check for robustness, we include year fixed effects and replace oil price with country oil reserves. Unlike oil price, oil reserves are country- and year-specific. As oil reserves are measured as economically relevant proven reserves, this variable is a good proxy for the expected Net Present Value of future rents given the prevailing technology and oil price. Therefore, oil reserves also capture corporate rents in oil industry and oil-dependent industries; our model implies that oil dependent industries should be less transparent in countries with predatory governments and greater oil reserves.

To investigate the impact of party orientation and the effect of elections we run a similar regression to (3) but include the left party dummy (L_t^c) or elections time dummy (these variables are defined later) instead of the predation index.

Thus we run,

$$\begin{aligned} OPACITY_{j,t}^c = {} & \alpha_j + \delta_c + \eta_t \\ & + \beta_1 EXPR_{j,t} \times OIL\_PRICE_t \times L_t^c \\ & + \beta_2 EXPR_{j,t} \times OIL\_PRICE_t + \beta_3 EXPR_{j,t} \times L_t^c + \beta_4 OIL\_PRICE_t \times L_t^c \\ & + \beta_5 L_t^c \\ & + \gamma' CONTROLS_{j,t}^c + \varepsilon_{j,t}^c \end{aligned} \quad . \qquad (4)$$

Regressions (3) and (4) are run on a sample of 72 2-digit SIC industries and 16 years from 49 countries. Since some of the variables are calculated using the U.S. data, we drop the U.S. from our analysis.

B. Industry Risk of Expropriation

The main variable in our study is the risk of expropriation. We proxy for the risk of government expropriation by industry profits dependency on oil price. Our underlying premise is that the risk of government expropriation is higher for industries whose profits are driven more by luck (high prices of oil) rather than managerial skill or effort. Bertrand and Mullainathan (2003) use a similar argument to differentiate between managerial luck and skill in a study of CEOs compensation.[7]

We define *industry oil price-dependency* as the coefficient β^{SIC2} on the natural logarithm of oil price in a regression of industry inflation-adjusted valuation on time trend and log of real oil price,

$$Q_t^{SIC2} = \alpha^{SIC2} + t^{SIC2} + \beta^{SIC2} \ln\left(P_t^{oil}\right) + \mu_t^{SIC2} \ , \tag{5}$$

where Q is the median firm valuation (inflation-adjusted) in an industry, α is a constant, t is the time trend, P^{oil} is inflation-adjusted price of oil, and μ is the error term. Regression (5) is estimated for every 2-digit SIC industry using a sample of U.S. publicly listed firms from COMPUSTAT tapes from 1950 through 2005. The firm valuation is defined as the sum of firm market value (COMPUSTAT item #199 times #25), total assets (#6) minus firm book value of equity (#60) over firm total assets.[8] We rely on U.S. firms rather than local firms to mitigate the impact of country characteristics on profitability of local industries. For example, if we estimated regression (5) using valuation data from local markets, the estimated coefficients would not represent true oil dependency because firms might misrepresent corporate profits in fear of expropriation.

Oil prices (in U.S. dollars) are obtained from the International Finance Statistics (IFS) available through the International Monetary Fund. We inflation-adjust oil prices by

[7] Other papers use an increase in oil price as an exogenous shock to industry profitability. For example, Lamont (1987) studies the relation between investment and cash flow by employing the 1982 oil shock. He observes that, on average, non-oil divisions of oil firms experienced a larger drop in investment than non-oil firms. Chhaochharia and Laeven (2007) use the relation between industry profits and oil price to address endogeneity between corporate governance and performance.

[8] An augmented Dickey-Fuller test rejects the hypothesis of a unit root in firm valuation and log of oil price series.

dividing the series by the U.S. Purchasing Price Index from the IFS. Figure 4 depicts the time-series of oil price expressed in U.S. 2005 dollars per barrel.

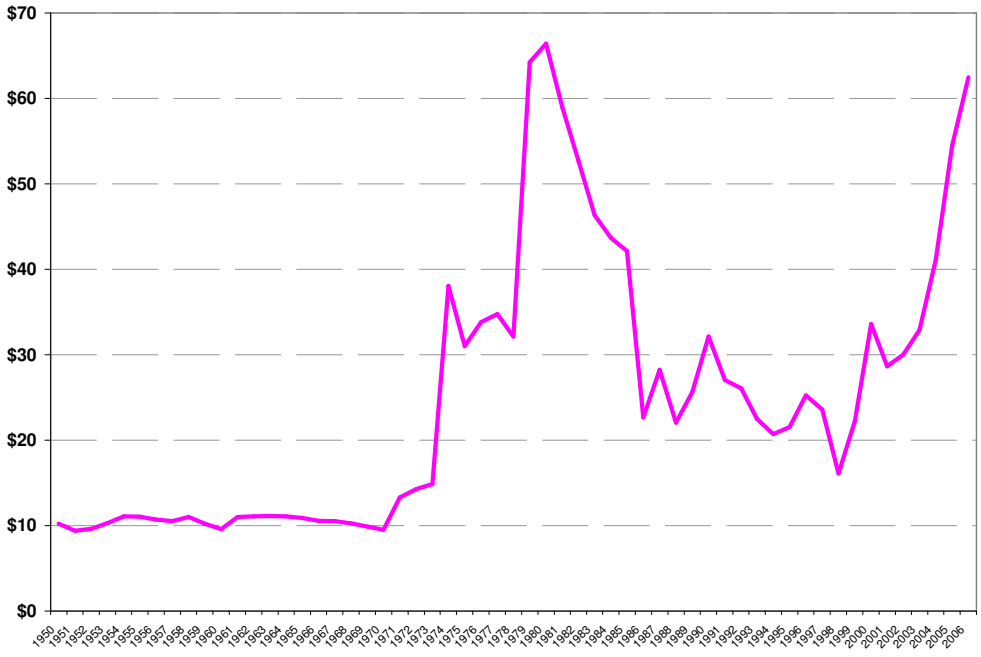

Figure 4: Oil prices dynamics expressed in 2005 U.S. dollars per barrel.
Dollar oil prices and Purchasing Price Index are from the International Monetary Fund's International Financial Statistics Dataset.

Figure 5 plots industry oil price-dependency for 72 two-digit SIC U.S. industries. The majority of industries (56 out of 72) show negative oil price sensitivities. Industries that rely on oil and other natural resources as a major production input exhibit negative sensitivities (especially "Petroleum Refining" and "Transportation Services"). As expected, industries whose major output is natural resources have positive sensitivities ("Mining of Minerals", "Coal Mining", "Oil and Gas Extraction").

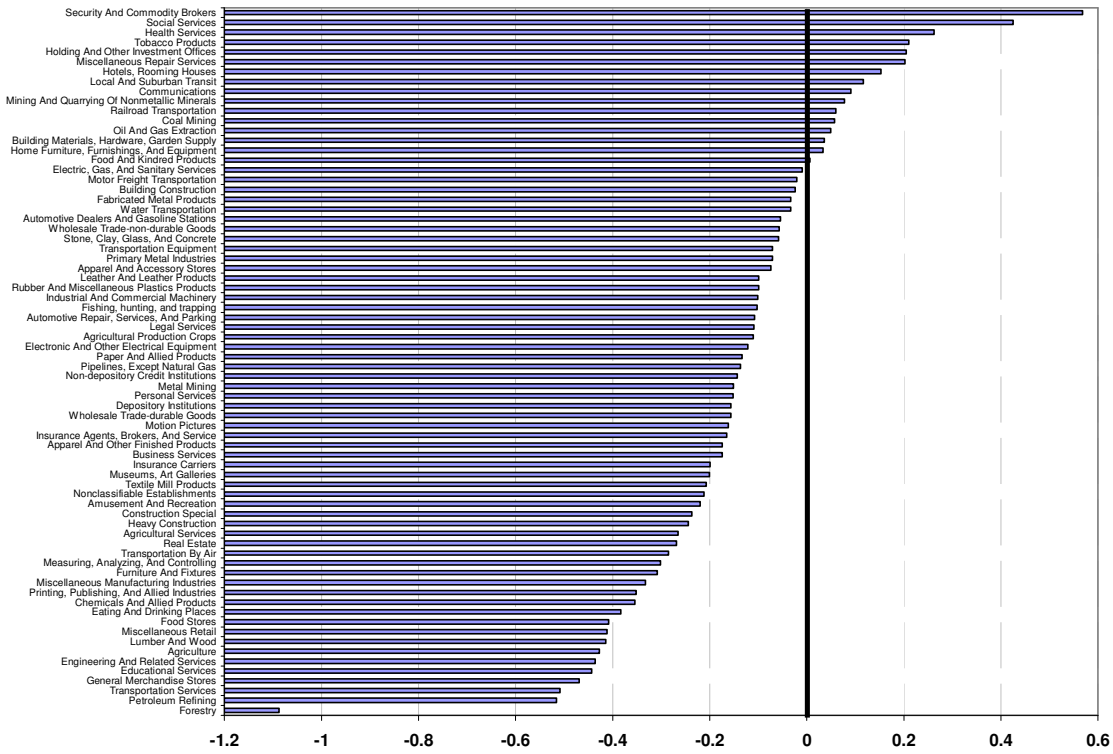

Figure 5: Industry oil price-dependency of U.S. industries.
Industry oil price-dependency is defined as the coefficient on the log of inflation-adjusted oil price of an industry-specific regression of median industry valuation (Q) on a constant (α), a time trend (t) and the log of oil price (P) run using all firms in COMPUSTAT during the time period from 1950 through 2005. The regression is $Q_t^{SIC2} = \alpha^{SIC2} + t^{SIC2} + \beta^{SIC2} \ln\left(P_t^{oil}\right) + \mu_t^{SIC2}$.

For robustness, we consider two alternative definitions of the index. First, we substitute the oil dependency variable with the oil and gas extraction industry dummy variable which takes a value of one for industries that belong to oil and gas extraction sector (SIC code = 13) and zero otherwise.[9] Second, we reconstruct the index using a general index of commodity prices provided by the Bureau of Commodity Research.

We provide evidence that oil price-dependency and oil industry dummy are reasonable proxies for the risk of expropriation. Using historical data on expropriations around the world (1955-2003) we confirm that more oil price-dependent industries have experienced more instances of expropriation. Figure 6 utilizes Kolotilin's (2007) data

[9] This industry includes companies primarily engaged in: (1) producing crude petroleum and natural gas; (2) extracting oil from oil sands and oil shale; (3) producing natural gasoline and cycle condensate; and (4) producing gas and hydrocarbon liquids from coal at the mine site.

(which, in turn, is based on the dataset of nationalizations in Kobrin, 1980, 1984) and depicts the relation between the total number of expropriations of foreign companies (grouped by major industries) and oil price-dependency. Expropriation is defined as a forced divestment of foreign property, and includes formal expropriation, extra-legal forced transfer of ownership, forced sale, and revision of contractual agreements using the coercive power of the government. The largest number of expropriations has been in the petroleum industry (98) followed by manufacturing (98), and mining (55). The number of expropriation instances in services, construction, and media are the lowest: 12, 8, and 3, respectively. Furthermore, it is evident that more oil price-dependent industries had more expropriations during 1955-2003.[10]

[10] The upward trend does not change if we scale the number of expropriations by industry aggregate market value calculated using all firms from Worldscope during time period 1990-2005 The scaling factor is not perfect though as it includes only publicly-traded corporations.

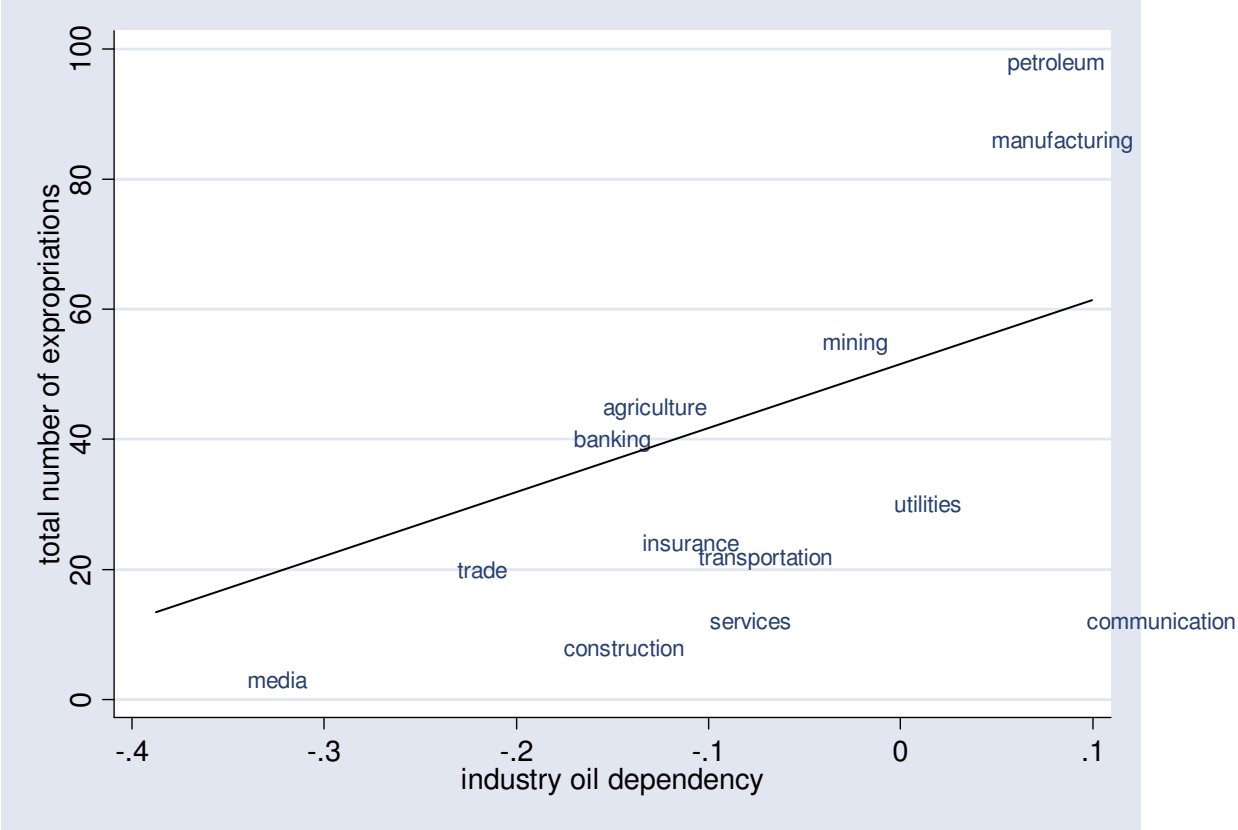

Figure 6. Number of nationalizations by industry (1955-1990 total) and industry oil dependency. Nationalizations are defined as forced divestment of foreign property. Industry oil price-dependency is defined as the coefficient on the log of inflation-adjusted oil price of an industry-specific regression of median industry valuation (Q) on a constant (α), a time trend (t) and the log of oil price (P) run using all firms in COMPUSTAT during the time period from 1950 through 2005. The regression is $Q_t^{SIC2} = \alpha^{SIC2} + t^{SIC2} + \beta^{SIC2} \ln\left(P_t^{oil}\right) + \mu_t^{SIC2}$. The intercept and the slope of the line are determined by the following OLS regression: Number of expropriation instances =132.1 + 48.6 × Industry oil price-dependency (*p-value* = 0.00; R^2 = 0.08; Number of industries = 13).

Figure 7 depicts the total number of expropriations of foreign companies in the oil extraction industry plotted against country autocracy index. There is a clear positive relation between the two; countries with more autocratic governments had more expropriations during 1955-2003.

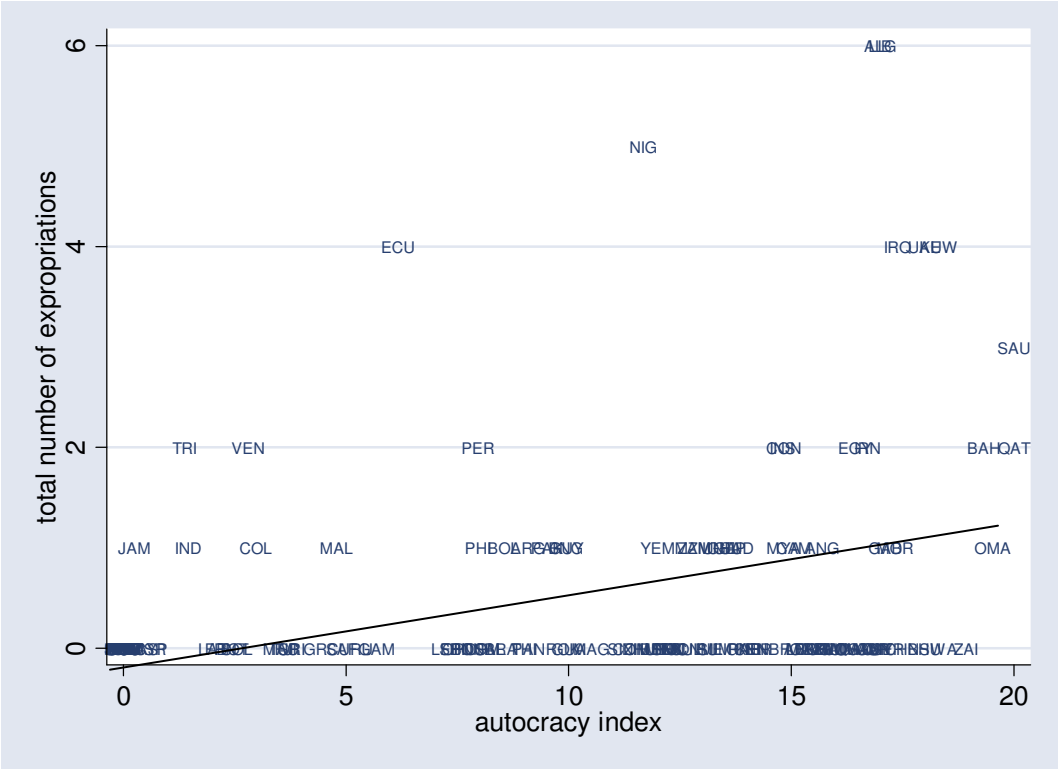

Figure 7. Number of nationalizations in the oil extraction industry (1955-2003 total) and autocracy.
Nationalizations are defined as forced divestment of foreign property. Country autocracy (defined later) measures the degree of closedness of political institutions. The intercept and the slope of the line are determined by the following OLS regression: Number of expropriation instances = 0.0673 + 0.0525 × Country autocracy (*p-value* = 0.00; R^2 = 0.08; Number of countries = 129).

Country oil reserves and the volume of oil production are from the 2007 BP Statistical Review. They are depicted in Figure 8. In our sample of 51 countries, Russia, Venezuela, Mexico and the U.S. had the largest oil reserves. Russia, Venezuela, the U.S., and China had the largest volume of oil production. Both oil reserves and oil production are endogenous to the price of oil. As oil becomes more expensive, oil reserves and oil production increase too as it becomes more profitable to fund oil exploration and extraction. Moreover, as the data on oil reserves include the economically relevant reserves, the reserves vary over time both due to exploration/depletion and due to change in the price of oil.

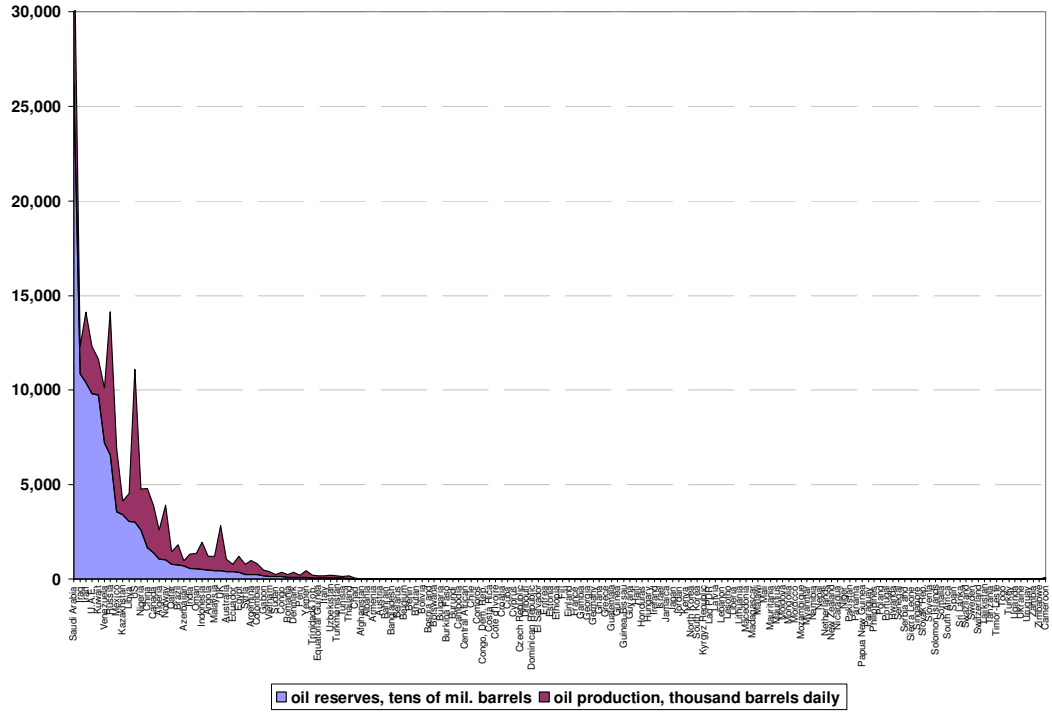

Figure 8. Country statistics on oil reserves in tens of millions of barrels and oil productions in thousands of barrels (daily), average 1990-2005. Countries are sorted according to the oil reserves. Source: 2007 BP Statistical Review.

C. Opacity Index

The *aggregate opacity* index consists of three components. The first one, *accounting opacity*, measures reported earnings quality. The second component, *insider opacity*, reflects information asymmetry about a firm. Finally, *informational opacity* reflects the amount of firm-specific information incorporated into stock prices. These variables are calculated for every firm present in the Worldscope and Datastream databases from 1990 through 2005. Our initial sample consists of 29,926 firms from 51 countries.

C.1 Accounting opacity calculated as quality of earnings reports

Our first measure of opacity – accounting opacity – is based on the quality of earnings reported in firms' financial statements. In line with Schipper (1989), Shivakumar (2000), and Chaney, Faccio, and Parsley (2007), earnings management is often used by managers to obscure information about a company's operating performance. Specifically, Chaney, Faccio, and Parsley (2007) provide empirical evidence that

politically-connected firms are under lower pressure to disclose truthful information and thus have lower quality of reported earnings.

To construct the accounting opacity we follow Dechow (1994), Dechow, Sloan, and Sweeney (1995), and Chaney, Faccio, and Parsley (2007) and measure firm earnings opacity as a deviation of reported accruals from a benchmark of accounting accruals. We use a country benchmark as in Chaney, Faccio, and Parsley (2007) and estimate a panel time-series, cross-country regression using 1990-2005 data from Worldscope,

$$\frac{TCA_{i,t}^{c}}{A_{i,t}^{c}} = \alpha^{c}\,\frac{\Delta Sales_{i,t}^{c}}{A_{i,t}^{c}} + \beta^{c}\,\frac{PP\,\&\,E_{i,t}^{c}}{A_{i,t}^{c}} + \sum\nolimits_{j\in J} D_{j} + \sum\nolimits_{\tau\in[1990,2005]} D_{\tau} + \eta_{i,t}^{c}, \qquad (6)$$

where Δ is the difference operator, *c* indexes countries, *i* indexes firms, and *t* indexes years. Total current accruals, *TCA*, are defined as *Δ(Current Assets) – Δ(Current Liabilities) – Δ (Cash) + Δ (Short-term and Current Long-term Debt)*; *A* is total assets, *Sales* is total sales, *PP&E* is the sum of net property, plant, and equipment, and accumulated reserves for depreciation, depletion and amortization. D_j are two-digit SIC industry fixed effects and D_τ are year fixed effects. All variables are expressed in U.S. dollars.

The *accounting opacity* for firm *i* in country *j* is defined as the standard deviation of the error term of the above regression calculated over 1990-2005. Firms that have fewer than 5 observations are dropped from the sample. We assign a 2-digit SIC industry code to every company and take industry medians for industry equivalents of the firm-level measures.

C.2 Insider opacity calculated as returns autocorrelation conditional on trading volume

We construct the second constituent of opacity, *insider opacity*, to capture the aggregate level of information asymmetry about a company. We use a measure developed by Llorente et al. (2002), which is based on stock return autocorrelation conditional on trading volume. They consider an economy with risk-averse investors and three types of assets: a riskless bond, a risky stock, and a non-traded asset. The stock's dividend is correlated with the payoff of the non-traded asset. Since the return of the stock and the non-traded asset are correlated, as the holdings of the non-traded asset change, the

investors want to adjust their stock positions to maintain an optimal risk exposure. There are two groups of investors with the first group (insiders) having more precise information about the stock's pay-off. This information asymmetry gives rise to trading on private information. Llorente et al. argue that when a subset of investors sells a stock for hedging reasons the stock's price must decrease to attract other investors to buy. Since the expectation of future stock payoff remains the same, the decrease in the price causes a low return in the current period and a high expected return for the next period. When a subset of investors sells a stock on private information, the stock price decreases reflecting the negative private information about its future payoff. Since this information is usually partially impounded into the price, the low return in the current period is followed by a low return in the next period, when the negative private information is further reflected in price.

The authors argue that during periods of intense trading volume, hedging trades generate negatively autocorrelated returns, and private information trades generate positively autocorrelated returns. The greater the information asymmetry between the two groups of traders, the more likely it is that returns are positively autocorrelated (conditional on trading volume). Their model suggests the following relation between returns and trading volume,

$$E[R_{i,t+1} \mid R_{i,t}, V_{i,t}] = C_1 R_{i,t} + C_2 R_{i,t} V_{i,t}, \tag{7}$$

where $R_{i,t}$ is the return for company i in period t, and $V_{i,t}$ is trading volume. They argue that C_2 is more positive when information asymmetry about a company is high.

We define *insider opacity* as the coefficient C_2 in the time-series regression,

$$R^c_{i,t+1} = A^c_i + C^c_{i,1} R^c_{i,t} + C^c_{i,2} R^c_{i,t} V^c_{i,t} + \varepsilon^c_{i,t}, \tag{8}$$

run for each firm i in country c during year t using at least 30 weeks of trading data from 1990 through 2005. In the above regression, A is the intercept, C_1, C_2 are the regression coefficients, and ε is the error term. In equation (8) return $R_{i,t}$ is defined as,

$$R_{i,t}^{c} = \mathbf{log}\left(\frac{P_{i,t}^{c} + D_{i,t}^{c}}{P_{i,t}^{c}}\right), \tag{9}$$

where $P_{i,t}$ is the weekly closing price, and $D_{i,t}$ is dividends per share. Trading volume, $V_{i,t}$, is calculated as de-trended volume,

$$V_{i,t}^{c} = \mathbf{log}\left(\frac{VOL_{i,t}^{c}}{N_{i,t}^{c}}\right) - \frac{1}{20}\sum_{j=1}^{20}\mathbf{log}\left(\frac{VOL_{i,t-j}^{c}}{N_{i,t-j}^{c}}\right), \tag{10}$$

where *VOL* is the number of shares traded, and *N* is the number of shares outstanding. We obtain daily closing prices, numbers of shares traded, and the number of shares outstanding from Datastream, and dividends per share from Worldscope.[11] All variables are measured in U.S. dollars. We aggregate this variable by taking 2-digit SIC code industry medians.

There is ample empirical evidence that coefficient C_2 is related to other measures of information asymmetry. Specifically, Llorente et. al. verify that C_2 is positive (negative) for companies that are more (less) likely to suffer from information asymmetry – that is, firms with high (low) bid-ask spread, small (large) size, and/or with fewer (more) analysts following. In a supportive study, Grishchenko, Litov, and Mei (2003) show that C_2 is, on average, larger for firms that are located in countries where information asymmetry problems are more severe, such as countries with poor disclosure requirements or countries that have weak corporate governance. This variable is also used by Fernandes and Ferreira (2006) for international firms to measure the amount of private information trading caused by information asymmetry between traders. In a recent paper, Gagnon, Karolyi, and Lee (2007) confirm that C_2 is smaller for firms in countries with more transparent stock markets.

[11] Coefficient C_2 can be contaminated by several data and econometric specification problems, such as autocorrelated errors, differences in the measurement period, and the effect of firm-specific private information versus market-wide information. Since the estimated coefficient can be affected by autocorrelated errors we repeat the regressions using an appropriate autoregressive structure, based on Breusch and Pagan (1980) test. Moreover, it is likely that private information trading is affected by information about firm-specific factors rather than information about market-wide factors. Therefore, we re-estimate (8) after deducting local stock markets' factors from returns and volume. Our main results are robust to these modifications.

C.3 Informational opacity measure calculated as returns synchronicity

As a final component of opacity, we use a measure of information-based trading measured by the degree of stock prices asynchronicity developed in Morck, Yeung, and Yu (2000). Intuitively, if a firm's stock return is highly correlated with the market factor then the stock return is less likely to contain firm-specific information. On the other hand, if the stock return moves asynchronously with the market return, it is indicative of more firm-specific information impounded into stock prices.

We calculate stock returns asynchronicity as in Morck, Yeung, and Yu (2000) by decomposing the variation in local individual stock returns into two components: unexplained (residual) sum of squares and explained (by local market index and U.S. index) sum of squares. To perform the decomposition we first run the following regression,

$$r_{i,t}^{c} = \alpha_{i}^{c} + \beta_{1,i}^{c} r_{m,t}^{c} + \beta_{2,i}^{c} r_{m,t}^{US} + \varepsilon_{i,t}^{c}, \tag{11}$$

where $r_{i,t}^{c}$ is firm *i*'s weekly return, $r_{m,t}^{c}$ is a value-weighted local market return, and $r_{m,t}^{US}$ is a value-weighted market return in the U.S. All returns are expressed in U.S. dollars. Local market and U.S. indices exclude the firm in question to avoid spurious correlation between individual returns and indices for markets with few firms. We define *informational opacity* as the logarithmic transformation of one minus the coefficient of determination of the above regression, $\mathbf{ln}\left(R_{i}^{2,c} / (1 - R_{i}^{2,c})\right)$, which is, by construction, equal to the difference between the logs of unexplained and explained sums of squares. High values of *informational opacity* mean that individual stock returns move more synchronously with local and U.S. market indexes which reflects less informative (in terms of firm-specific information) stock prices. To mitigate the impact of outliers we winsorize the three opacity measures at the 1% and 90% levels. Firm observations are again aggregated to 2-digit SIC code industries.

C.4 Aggregate opacity index

The above methodologies result in three indexes of opacity. To isolate the common component of the cross-section of each index, we use the principal component analysis using one factor. Every loading of the principal component enters with the positive sign reflecting the fact that the three measures are positively correlated. The loadings are 0.550 for *accounting opacity*, 0.526 for *insider opacity*, 0.649 for *informational opacity*.

D. External Financing Need

We calculate our main control variable, the *external financing need*, as in Rajan and Zingales (1998). It is defined as the industry median value (over 1990-2005) of capital expenditures (COMPUSTAT #128) minus cash flows from operations (#123 + #125 + #126 + #106 + #213 +#217) divided by capital expenditures. This variable is calculated at the 2-digit SIC industry level using the sample of all U.S. firms included in COMPUSTAT. It is then matched (by 2-digit SIC code) with non-U.S. industries from our international sample. This approach assumes that U.S. capital markets are frictionless and that non-U.S. firms have similar external financing needs as the U.S. firms in the same industry.

E. Predation, Autocracy Indexes, Party Orientation, and Elections

Individual indexes of institutional development are known to be highly correlated and using them in one regression causes multicollinearity. To address this problem, we extract the first principal component from several individual proxies.

Our *predation* index consists of the following attributes: (i) corruption in government; (ii) risk of government expropriation; (iii) lack of property rights protection; (iv) rule of law (assessment of law and order tradition in a country); (v) government stance towards business (assessment of the likelihood that the current government will implement business-unfriendly policies); (vi) freedom to compete (assessment of government policies towards establishing a competitive market environment); (v) quality of bureaucracy (assessment of whether bureaucracy impedes fair business practices); and (viii) impact of crime (assessment of whether crime impedes private businesses development). The corruption and the rule of law indices are obtained from *Transparency International* (TI), while the rest of the indices come from the *Economist*

Intelligence Unit (EIU). The loadings for the predation index are as follows: 0.344 for the corruption index; 0.353 for the risk of government expropriation; 0.372 for the lack of property rights protection index; 0.366 for the rule of law index; 0.353 for the government stance towards business index; 0.349 for the freedom to compete index; 0.370 for the quality of bureaucracy index; and 0.319 for the impact of crime index.[12]

To measure political constraints on chief executives in the government we use democracy and autocracy indices compiled by a well-known political data set, *POLITY IV* (Marshall and Jaggers, 2006). The *autocracy* index is calculated as POLITY's "autocratic government" variable minus POLITY's "democratic government" variable.[13] The "autocratic government" variable measures general closedness of political institutions. The "democratic government" measures general openness of political institutions.[14] The two variables assess a number of factors, such as (i) competitiveness of political participation; (ii) regulation of participation; (iii) the openness and competitiveness of executive recruitment; and (iv) constraints on the chief executive.

We rely on the World Bank's database on political institutions compiled by Beck et al. (2001) to define main party orientation and election years. The data are cross-checked using a number of sources: *Journal of Democracy*, *Elections around the World* (http://www.electionworld.org/), *Election Guide* (http://www.electionguide.org/), and *CIA Factbook*. The *party orientation* (left, right, or center) is defined as the party of chief executive. The *election year* is defined as the year of executive election, which is the year of parliamentary election for a parliamentary system or an assembly-elected presidential system and the year of presidential election for a presidential system. We single out

[12] We multiply this index by -1 and add a constant equal to the maximum value of the index so that larger values of the index represent greater predation.

[13] We add a constant of value 10 to the score to change the scaling from -10-to-10 to 0-to-20. Furthermore, this variable is available for the time period from 1990 through 2003. It is available for all countries, except for Hong Kong.

[14] As a robustness check we use the "proportional representation of votes" index and the "divided government" index. The "proportional representation of votes" takes a value of one if legislatures were elected based on the percentage of votes received by their party and zero otherwise. The ""divided government" is the probability that two random chosen deputies belong to a different party in a given year.

those election years during which the party orientation changed from right to left.[15] Table I contains information on various country's political systems (presidential or parliamentary), chief executive's party type (left, right, or center), and election dates of government executives.

F. Summary Statistics and Correlations

Table II describes the variables in this study. Table III presents summary statistics for industry oil price-dependency, the accounting opacity index and its components. Table IV contains country variables: the predation index, the autocracy index, GDP per capita, oil reserves, and oil production.

Table V reports correlation coefficients between main variables. All three components of the opacity index are positively and significantly correlated among each other and with the aggregate opacity index. Across the sample countries, more oil-dependent industries are less transparent. Oil price-dependency is negatively related to three out of four opacity measures. The correlation coefficient is significant only for the informational opacity.[16] Firms in countries with more predatory or autocratic governments are generally more opaque. Predation index is positively and significantly correlated with the accounting opacity, informational opacity, and aggregate opacity. Insider opacity is significantly higher in more autocratic countries. More economically-developed countries (as measured by GDP per capita) have significantly lower levels of predation and autocracy. Corporations located in countries richer in natural resources (as measured by oil reserves) have greater opacity. Moreover, these countries tend to be more predatory and autocratic.

[15] We assume that managers and investors face uncertainty about future elections outcomes.

[16] In Table V, we do not report the correlation coefficients between the industry oil price-dependency and country measures because it does not change across countries.

Table VI

Oil price-dependency, opacity, and predation.

Regressions of industry opacity on interactions of oil price-dependency with oil price or country oil reserves, and predation including country, industry, and year fixed effects, and with robust standard errors.

This table reports the results of OLS regressions of aggregate opacity (Panel A) and its components: accounting opacity (Panel B), insider opacity (Panel B), and informational transparency (Panel C). The independent variables are: interaction term of industry oil price-dependency with the natural log of oil price or country oil reserves and country predation; industry oil price-dependency with the natural log of oil price or country oil reserves; industry oil price-dependency with predation; the natural log of oil price or country oil reserves with predation; industry external financing needs with predation; oil reserves, predation, and external financing needs. All regressions include industry, country, and year fixed effects. All regression coefficients are multiplied by 100. Numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Industries from the U.S. are dropped from the sample. The variables are defined in Table II.

Country variable	**PREDATION**							
Dependent variable	**A: aggregate opacity**		**B: accounting opacity**		**C: insider opacity**		**D: informational opacity**	
oil price or oil reserves	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*
oil price-dependency × oil price or reserves × predation	**0.78149**	**0.01371**	**0.05539**	**0.01186**	**0.16686**	**0.00986**	**0.08185**	**0.00500**
	(0.09)	(0.07)	(0.00)	(0.00)	(0.01)	(0.09)	(0.03)	(0.01)
oil price-dependency × oil price or reserves	2.30875	0.02104	-0.12904	**-0.05928**	**0.69213**	**0.02358**	1.21354	0.01245
	(0.16)	(0.69)	(0.84)	(0.00)	(0.00)	(0.00)	(0.37)	(0.37)
oil price-dependency × predation	**2.23287**	**0.33894**	-0.48103	**0.25477**	**0.54463**	0.00105	0.39114	**0.04574**
	(0.10)	(0.07)	(0.49)	(0.00)	(0.01)	(0.97)	(0.76)	(0.01)
oil price or reserves × predation	-0.05467	**0.06118**	-0.01222	-0.00154	0.01732	-0.00061	**0.21017**	**0.37753**
	(0.65)	(0.00)	(0.80)	(0.41)	(0.30)	(0.73)	(0.03)	(0.00)
Oil reserves	**-**	**-0.16691**	-	-0.00553	**-**	0.000396	**-**	**0.06902**
		(0.00)		(0.65)		(0.61)		(0.00)
predation	0.61104	-0.08432	0.15527	**0.11258**	-0.02238	0.03801	**0.81303**	**0.23274**
	(0.61)	(0.61)	(0.37)	(0.02)	(0.72)	(0.16)	(0.02)	(0.02)
need for external financing × predation	**-1.14139**	4.34023	0.46583	0.46254	-0.02238	0.34181	**0.44455**	0.34554
	(0.00)	(0.12)	(0.40)	(0.40)	(0.72)	(0.18)	(0.09)	(0.23)
need for external financing	**-0.62168**	**-1.20496**	**-2.21543**	**-0.81702**	**-0.70373**	-0.07514	0.06893	**-1.67021**
	(0.05)	(0.00)	(0.00)	(0.00)	(0.01)	(0.13)	(0.97)	(0.06)
industry fixed effects	included	included	included	included	included	Included	included	included
country fixed effects	included	included	included	included	included	Included	included	included
year fixed effects	included	included	included	included	included	Included	included	included
R^2	0.352	0.360	0.548	0.567	0.196	0.201	0.325	0.332
number of observations	20,978	20,111	23,076	22,168	23,787	22,649	25,461	24,272
number of industries	72	72	72	72	72	72	72	72
number of countries	49	49	49	49	49	49	49	49
Number of years	16	16	16	16	16	16	16	16

Table VII

Oil price-dependency, opacity, and autocracy.

Regressions of industry opacity on interactions of oil price-dependency with oil price or country oil reserves, and autocracy including country, industry, and year fixed effects, and with robust standard errors.

This table reports the results of OLS regressions of aggregate opacity (Panel A) and its components: accounting opacity (Panel B); insider opacity (Panel B), and informational transparency (Panel C). The independent variables are: interaction term of industry oil price-dependency with the natural log of oil price or country oil reserves and country autocracy; industry oil price-dependency with the natural log of oil price or country oil reserves; industry oil price-dependency with autocracy; the natural log of oil price or country oil reserves with autocracy; industry external financing needs with autocracy; oil reserves, autocracy, and external financing needs. All regressions include industry, country, and year fixed effects. All regression coefficients are multiplied by 100. Numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Industries from the U.S. are dropped from the sample. The variables are defined in Table II.

country variable	**AUTOCRACY**							
dependent variable	**A: aggregate opacity**		**B: accounting opacity**		**C: insider opacity**		**D: informational opacity**	
	oil price	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*
oil price-dependency × oil price or oil reserves × autocracy	-0.10534	**0.01704**	**0.01636**	**0.00747**	-0.01325	0.00071	**0.03011**	**0.01191**
	(0.67)	(0.06)	(0.08)	(0.01)	(0.73)	(0.60)	(0.10)	(0.10)
oil price-dependency × oil price or oil reserves	3.60500	**0.03586**	0.12357	**-0.03123**	0.20514	0.00949	0.36038	**-0.11514**
	(0.70)	(0.00)	(0.80)	(0.03)	(0.28)	(0.15)	(0.74)	(0.00)
oil price-dependency × autocracy	0.06352	0.03586	-0.11808	0.00751	0.03106	-0.00272	0.80452	-0.11514
	(0.94)	(0.67)	(0.58)	(0.76)	(0.80)	(0.85)	(0.26)	(0.69)
oil price or oil reserves × autocracy	**0.09103**	**0.02048**	-0.00397	**0.00751**	**-0.00578**	0.00025	**0.09383**	**0.01673**
	(0.00)	(0.00)	(0.26)	(0.09)	(0.01)	(0.77)	(0.00)	(0.00)
oil reserves	**-**	**-0.14936**	**-**	**-0.02840**	-	0.00144	**-**	**0.14425**
		(0.00)		(0.08)		(0.86)		(0.00)
autocracy	**0.28335**	-0.11345	**0.16243**	0.01241	**0.05527**	**0.07720**	**0.29079**	**0.27756**
	(0.09)	(0.45)	(0.00)	(0.79)	(0.04)	(0.00)	(0.05)	(0.04)
need for external financing × autocracy	**-1.35019**	-2.94771	**-0.91300**	-0.12494	0.06257	-0.48934	0.38884	-0.25687
	(0.00)	(0.11)	(0.00)	(0.83)	(0.24)	(0.17)	(0.18)	(0.87)
need for external financing	-0.26873	**-0.81162**	**-2.27282**	**-0.12800**	**-0.66905**	-0.01462	-0.75443	**-0.618627**
	(0.90)	(0.00)	(0.00)	(0.00)	(0.03)	(0.53)	(0.65)	(0.00)
industry fixed effects	included	Included	Included	included	included	included	included	included
country fixed effects	included	Included	Included	included	included	included	included	included
year fixed effects	included	Included	Included	included	included	included	included	included
R^2	0.333	0.361	0.561	0.561	0.200	0.201	0.333	0.337
number of observations	18,324	18,221	20,343	20,204	20,722	20,461	22,406	22,073
number of industries	70	70	70	70	70	70	70	70
number of countries	46	46	46	46	46	46	46	46
Number of years	16	16	16	16	16	16	16	16

Table VIII

Oil price-dependency, opacity, and party orientation.

Regressions of industry opacity on interactions of oil price-dependency with oil price or country oil reserves, and left party type dummy variable including country, industry, and year fixed effects, and with robust standard errors.

This table reports the results of OLS regressions of aggregate opacity (Panel A) and its components: accounting opacity (Panel B); insider opacity (Panel B), and informational transparency (Panel C). The independent variables are: interaction term of industry oil price-dependency with the natural log of oil price or country oil reserves and left party dummy; industry oil price-dependency with the natural log of oil price or country oil reserves; industry oil price-dependency with left party dummy; the natural log of oil price or country oil reserves with left party dummy; industry external financing needs with left party dummy; oil reserves, left party dummy, and external financing needs. Left party dummy takes a value of one if the party of the government chief executive is classified as left and zero otherwise. All regressions include industry, country, and year fixed effects. All regression coefficients are multiplied by 100. Numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Industries from the U.S. are dropped from the sample. The variables are defined in Table II.

country variable	**PARTY ORIENTATION**							
dependent variable	**A: aggregate opacity**		**B: accounting opacity**		**C: insider opacity**		**D: informational opacity**	
oil price or oil reserves	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*
oil price-dependency × oil price or oil reserves × left	**0.50532**	**0.22936**	**0.96287**	**0.18807**	0.03100	0.01398	**0.38846**	**0.14349**
	(0.00)	(0.00)	(0.10)	(0.00)	(0.24)	(0.23)	(0.01)	(0.01)
oil price-dependency × oil price or oil reserves	0.12691	0.03723	-0.55562	-0.0168	2.3008	0.0063	5.2626	**-0.9984**
	(0.94)	(0.26)	(0.31)	(0.79)	(0.35)	(0.89)	(0.70)	(0.00)
oil price-dependency × left	6.01218	**1.93655**	-3.06417	**0.73237**	1.01711	0.04473	5.89782	-0.63452
	(0.40)	(0.01)	(0.22)	(0.00)	(0.36)	(0.72)	(0.35)	(0.20)
oil price or oil reserves × left	-0.04565	**-0.15576**	**0.07223**	**-0.02094**	0.01379	-0.00698	**0.30152**	**0.15211**
	(0.68)	(0.00)	(0.05)	(0.00)	(0.42)	(0.26)	(0.00)	(0.01)
oil reserves	**-**	**0.22118**	-	-0.00732	**-**	**0.01799**	**-**	**-0.19315**
		(0.00)		(0.36)		(0.05)		(0.04)
left	**-0.37911**	**-0.36557**	0.01395	-0.01195	**0.06544**	-0.06510	-0.16139	0.13164
	(0.01)	(0.01)	(0.74)	(0.46)	(0.01)	(0.13)	(0.21)	(0.73)
need for external financing × left	-2.21911	-2.75217	**-1.06724**	-0.49429	-0.10211	-0.39990	1.54538	-1.44806
	(0.13)	(0.15)	(0.04)	(0.11)	(0.65)	(0.33)	(0.22)	(0.43)
need for external financing	-2.00272	-1.30471	0.09632	0.16522	-0.28564	0.07078	-0.76748	**3.69231**
	(0.32)	(0.17)	(0.88)	(0.48)	(0.33)	(0.69)	(0.63)	(0.09)
industry fixed effects	included	included	Included	included	included	included	included	included
country fixed effects	included	included	Included	included	included	included	included	included
year fixed effects	included	included	Included	included	included	included	included	included
R^2	0.370	0.371	0.564	0.567	0.200	0.201	0.3384	0.3424
number of observations	18,253	18,149	20,277	20,138	20,409	20,409	22,350	22,022
number of industries	71	71	71	71	71	71	71	71
number of countries	46	46	46	46	46	46	46	46
number of years	15	15	15	15	15	15	15	15

Table IX

Oil price-dependency, opacity, and elections.

Regressions of industry opacity on interactions of oil-dependency with oil price or country oil reserves, and elections conditional on party change including country, industry, and year fixed effects, and with robust standard errors.

This table reports the results of OLS regressions of aggregate opacity (Panel A) and its components: accounting opacity (Panel B); insider opacity (Panel B), and informational transparency (Panel C). The independent variables are: interaction term of industry oil price-dependency with the natural log of oil price or country oil reserves and election year conditional on party orientation change (from right to left); industry oil price-dependency with the natural log of oil price or country oil reserves; industry oil price-dependency with election year conditional on party orientation change (from right to left); the natural log of oil price or country oil reserves with election year conditional on party orientation change (from right to left); industry external financing needs with election year conditional on party orientation change (from right to left); oil reserves, election year conditional on party orientation change (from right to left), and external financing needs. Election year conditional on party orientation change dummy takes a value of one for the election year during which the party orientation changed from right to left and zero otherwise. All regressions include industry, country, and year fixed effects. All regression coefficients are multiplied by 100. Numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Industries from the U.S. are dropped from the sample. The variables are defined in Table II.

country variable	**ELECTION YEAR**							
dependent variable	**A: aggregate opacity**		**B: accounting opacity**		**C: insider opacity**		**D: informational opacity**	
oil price or oil reserves	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*	*oil price*	*oil reserves*
oil price-dependency × oil price or oil reserves × election year	**0.52344**	**0.70876**	**4.90856**	**0.11307**	1.64521	0.08910	**32.97409**	**0.40218**
	(0.01)	(0.01)	(0.03)	(0.05)	(0.77)	(0.33)	(0.05)	(0.03)
oil price-dependency × oil price or oil reserves	0.02944	-0.70876	-0.05608	**-0.05531**	0.17142	0.00617	0.72444	**-0.06932**
	(0.98)	(0.85)	(0.88)	(0.00)	(0.23)	(0.17)	(0.39)	(0.01)
oil price-dependency × election year	45.28517	**4.64938**	-4.94711	0.52687	15.07827	0.16509	**105.89600**	**4.97485**
	(0.52)	(0.01)	(0.79)	(0.60)	(0.14)	(0.58)	(0.10)	(0.01)
oil price or oil reserves × election year	**-0.60503**	0.09306	-0.12577	-0.03857	-0.02127	0.00521	0.09744	-0.05198
	(0.09)	(0.63)	(0.38)	(0.41)	(0.67)	(0.75)	(0.75)	(0.62)
oil reserves	-	0.04796	-	-0.00444	-	0.00638	-	-0.00977
		(0.27)		(0.73)		(0.22)		(0.74)
election year	**0.29242**	-0.28635	0.01102	-0.01256	**0.05743**	**-0.05938**	**-0.04633**	0.01114
	(0.03)	(0.33)	(0.78)	(0.75)	(0.01)	(0.01)	(0.00)	(0.93)
need for external financing × election year	**-9.14111**	**-4.30544**	1.91361	-0.38839	0.24002	-0.33930	-2.41042	1.77011
	(0.07)	(0.05)	(0.39)	(0.48)	(0.69)	(0.18)	(0.51)	(0.21)
need for external financing	**-4.32106**	1.47189	-0.43506	0.74080	-0.37449	-0.06773	1.55966	-1.29019
	(0.01)	(0.55)	(0.42)	(0.53)	(0.13)	(0.83)	(0.26)	(0.52)
industry fixed effects	Included	Included	Included	included	included	included	included	included
country fixed effects	Included	Included	Included	included	included	included	included	included
year fixed effects	Included	Included	Included	included	included	included	included	included
R^2	0.358	0.358	0.545	0.565	0.198	0.197	0.330	0.330
number of observations	20,111	20,111	23,076	22,168	22,649	22,649	24,272	24,272
number of industries	70	70	70	70	70	70	70	70
number of countries	46	46	46	46	46	46	46	46
number of years	16	16	16	16	16	16	16	16

IV. Impact of Autocracy, Predation, and Political Cycles on Opacity of Oil-price Dependent Industries

In this section, we test our main prediction: industries vulnerable to government expropriation are more opaque in more predatory countries, especially when the price of oil is high, or if they are located in oil-rich countries. Each regression described in this section is run with industry, country, and year fixed effects. The reported *p-values* are calculated using heteroscedasticity-consistent robust standard errors.

Table VI presents the estimates of regression (3) with the predation index as a measure of property rights protection. In Panel A, the dependent variable is the aggregate opacity index. Panels B-D use opacity components as dependent variables separately - accounting opacity in Panel B, insider opacity in Panel C, and informational opacity in Panel D. We report two types of regressions per each panel. First, we regress opacity measures on the triple interaction term between industry oil price-dependency, country predation, and oil price. In these regressions, we control for the double interaction effects of oil price-dependency with predation, oil price-dependency with oil price, country predation with oil price, and external financing need with predation. The regressions also include country predation and the need for external financing. The second types of regressions use country oil reserves instead of oil price.

According to Panel A, oil price-dependent industries in more predatory countries have lower aggregate transparency, especially during periods of high oil prices. This is evident from the positive and significant coefficient on the triple interaction term. This result holds if we substitute oil price with the country oil reserves. Some of the double interaction effects and the levels of individual variables are significant as well. Specifically, industries more dependent on oil located in more predatory countries are less transparent, independently of oil price or country oil reserves; the coefficient on the interaction of oil dependency with predation is positive and significant in both specifications of Panel A. Moreover, countries abundant in oil are less transparent if governments are more predatory; the coefficient on interaction of oil reserves with

predation is positive and significant. The coefficient on external financing is negative and significant.

Next we repeat the above regressions using the individual components of the opacity index. First, we use the accounting opacity as a measure of earning quality (Panel B). It turns out that the main variable of interest, the triple interaction term, has the largest impact (in terms of its significance level) on the accounting opacity compared to the remaining two opacity measures, insider opacity and informational opacity. With very few exceptions, the coefficients on the double interaction terms and the level variables are comparable to those in the regression with the aggregate opacity index described above. There is one notable exception. When country oil reserves are used (second specifications of Panels B, C, and D), the coefficient on the predation index is positive and significant for all three individual opacity constituents. This means that, on average, more predatory countries are more opaque.

When the second opacity component is used, the insider opacity (Panel C), the coefficient on the interaction of oil-price dependency with oil price and predation is insignificant. However it becomes significant at the 10% level with country oil reserves. As for the third opacity component, information opacity (Panel D), the coefficient on the triple interaction term is significant at the 5% level when either oil price or oil reserves variables is used.

Next we investigate the impact of industrial oil price-dependency and oil price (country oil reserves) on opacity conditional on how constrained the government is. The measure of the constraints is the autocracy index. The results are reported in Table VII. They are slightly weaker compared to those reported in Table VI. Specifically, the triple interaction term is insignificant when the dependent variable is aggregate opacity and when oil price is used. However, the interaction term between oil dependency, oil reserves, and autocracy is significant at 10% for all measures of opacity, except for one, insider opacity.[17]

[17] The pattern of the results remains the same if we use the "proportional representation of votes" and "divided government" variables instead of the autocracy index.

As a robustness check, we proxy for the risk of expropriation by the oil and gas extraction industry dummy variable. In our sample, across all countries and years, this variable takes a value of one for 329 out of 25,854 observations. Although a smaller sample size weakens the power of our tests, most of the results reported above hold. Compared to the Table VI results (when predation index is used), it is significant for the aggregate opacity and for the individual components. Compared to the Table VII (when autocracy index is used) results, the interaction term is significant for aggregate opacity and accounting opacity but insignificant for insider opacity and informational opacity. To save space we do not report these results.

Next, we turn our attention to the political variables. The variables we condition on are the party orientation (Table VII) and elections dummy variable given that the party orientation changes from right to left (Table VIII).

According to Table VII, oil price-dependent industries, in general, are more opaque when the government is leftist as opposed to rightist. Particularly, the interaction term between oil price-dependency, left government dummy variable, and oil price or oil reserves is positive and significant for aggregate opacity, accounting opacity, and informational opacity; it is insignificant for insider opacity. According to the double interaction effects and the level variables, the countries with left government are more opaque. Opacity also increases if left governments are in countries with more oil. This is evident from the negative and significant coefficient on the left government dummy but positive and significant coefficient on the interaction between left party dummy variable and oil reserves. This result is consistent with the notion that the further left a particular country's government is oriented, the more likely it is to pursue redistributive policies instead of free market-oriented policies.[18]

In Table VIII, we report the results with the elections dummy variable. The elections dummy takes a value of one for years when the elections of chief executives take place

[18] By including country and industry fixed effects, we essentially compare opacity levels of industries that belong to the same country, and thus avoid a potential problem of a left wing government in, for instance Germany, being more business-friendly than a right government, say in Mexico.

and the party orientation changes from right to left. Presumably there is an increase in uncertainty about the future government policies pertaining to how friendly the governments would be to private enterprises. With the election year dummy, we obtain the following results. Election year dummy (conditional on party change from right to left) in the triple interaction term is negative and significant for all opacity measures, except for the insider opacity. The double interaction terms as well as the level variables are mostly insignificant.

Taken together, Tables VII and VIII, and IX confirm the predictions of our stylized theoretical model. As the level of predation or government autocracy increases, industries more susceptible to expropriation become more opaque. This effect is especially strong in oil-rich countries or during the periods of high oil prices. The results are robust to multiple definitions of opacity: information opacity, accounting opacity and the aggregate index that captures the common component of the three individual constituents. The results are weaker for the insider opacity variables.

Our results are economically significant. To demonstrate, we compare the oil and gas extraction industry (high expropriation risk, oil dependency = 0.049) with the agriculture industry (low expropriation risk, oil dependency = -0.428) in Venezuela (high-predation country, predation = 3.984) and Norway (low-predation country, predation = 0.138). According to Table VI (the first column), the coefficient on the interaction term of expropriation risk, predation and log of oil price is 0.00781. This number means that, compared to the agriculture industry, the aggregate opacity for the oil and gas industry is larger by 0.0493 (61% of the mean sample for aggregate opacity) in Venezuela. The difference in opacity between the oil and gas industry and the agriculture industry in Norway is much lower – only 0.00171 (2% the mean of aggregate opacity).[19]

[19] It is calculated as $OPACITY_{oil} - OPACITY_{agriculture} = 3.984 \times 0.00781 \times [0.049 - (-0.428)] \times 3.325 = 0.0493$ for Venezuela. For Norway, it is $0.138 \times 0.00781 \times [0.049 - (-0.428)] \times 3.325 = 0.00171$. The numbers are evaluated for the mean value of the log of oil price (3.325).

V. Impact of Predation on Capital Allocation and Industry Growth of Oil-dependent Industries

In this section, we examine the effect of lower corporate transparency on the quality of industrial capital allocation and growth.

A. The Measures of Capital Allocation Efficiency and Industrial Growth

Capital allocation is calculated as in Wurgler (2000) using industrial panel data from the *United Nation's General Industrial Statistics* (INDSTAT-3 CD-ROM).[20] The data contain major industrial statistics for 57 industries from 60 countries from 1963 through 1994. To be consistent with Rajan and Zingales (1998) we consider the time period from 1980 through 1990. Two variables are used to construct the capital allocation efficiency measure: gross fixed capital formation and value-added. Value-added is the value of shipments of goods produced minus the cost of intermediate goods and required services (excluding labor). Gross fixed capital formation is the cost of new and used fixed assets minus the value of sales of used fixed assets, where the fixed assets include land and buildings.

According to Wurgler (2000), efficient capital allocation involves increase in investment in growing industries and decrease in investment in declining industries. Thus we define *capital allocation efficiency* as the country-specific, industry-specific elasticity (Ω_j^c) of investment (I) with respect to value-added (V). To estimate the elasticity we run,

$$\ln\left(\frac{I_{j,t}^c}{I_{j,t-1}^c}\right) = \alpha_j^c + \Omega_j^c \ln\left(\frac{V_{j,t}^c}{V_{j,t-1}^c}\right) + \varphi_{j,i}^c \tag{12}$$

for every industry j and country c using all available annual data from 1980 through 1990. In (12), $\varphi_{j,t}^c$ is the error term. We drop industries if the number of observations to

[20] Using aggregate industrial statistics from the United Nations makes the estimation of (12) more precise. Unlike the Worldscope that contains information only on publicly-listed firms, the UN collects statistics about aggregate levels of industrial production.

run regression (12) is less than ten. Both investment and value-added are deflated by the Producer Price Index. Industry growth is measured as the growth in real value-added calculated from 1980 through 1990.[21]

Although the above measures have been already used in prior studies (Wurgler (2000), Beck and Levine (2002)), we accept that the elasticity coefficient in (12) can be biased because of omitted variables. For example, investments in resources-extraction industries are responsive to the value of investment options. To account for this, we repeat regression (12) with an additional variable - oil price volatility.[22] Our results do not change.

In the capital allocation regression, some of the variables are different from those used in the opacity regressions. First, the predation index is modified because the one we used in the opacity sample is not available for prior to 1994. The predation index is now based on the "quality of governance" dataset from Knack (1999). It consists of annual values for (i) corruption in government (the degree to which corruption distorts economic and financial environment, reducing the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability); (ii) rule of law (assessment of the law and order tradition); (iii) quality of bureaucracy (assessment whether bureaucracy impedes fair business practices); (iv) risk of repudiation of contracts by government (likelihood that a country will modify or repudiate a contract with a foreign business); (v) risk of expropriation of private investment (evaluation of the risk of outright confiscation and forced nationalization of property). All individual components come from the *International Country Risk Guide*. We first take the average values of each component (over 1980-1990) and then extract the first principal component to construct a single measure. The loadings for the predation index are: 0.439 for the corruption index; 0.440 for the rule of law index; 0.450 for the quality of bureaucracy; 0.452 for the risk of contracts repudiation; and 0.455 for the risk of expropriation.

[21] The UN data is classified by the International SIC codes (ISIC) classification. We manually match the ISIC codes with the SIC codes.

[22] Annual oil price volatility is calculated using monthly statistics.

We also use different controls. Rajan and Zingales (1998) find that more financially-dependent industries outgrow less financially-dependent industries in countries that are more financially developed. Thus we control for the interaction of industry financial need with country financial development. Financial development is defined as the sum of stock market capitalization and private credit relative to GDP. This variable is taken directly from Rajan and Zingales (1998).[23] We also control for the interaction of intangible assets intensity with country expropriation risk index (the latter variable is from the *International Country Risk Guide*). Claessens and Laeven (2003) show that in countries with more secure property rights, intangibles-intensive industries growth faster. As in case with the external financing needs variable, intangibles intensity is measured using U.S. data. It is defined as the ratio of intangible assets (COMPUSTAT item #33) to net property, plant, and equipment (#8).

Tables X contains summary statistics grouped by country (country average values of allocation efficiency and industry growth, country financial development, country predation, and autocracy). Consistent with Wurgler (2000), more financially developed countries exhibit better allocation of capital. The correlation coefficient between country financial development and capital allocation is 0.30 (*p-value* = 0.06).

B. Regression Results

The capital allocation and industry growth regressions are similar to (3),

$$\begin{aligned} CAPITAL\_ALLOCATION_j^c \text{ or } GROWTH_j^c = {} & \alpha_j + \delta_c + \beta_1 EXPR_j \times OIL\_RES^c \times PREDATION^c \\ & + \beta_2 EXPR_j \times OIL\_RES^c + \beta_3 EXPR_j \times PREDATION^c \\ & + \gamma' CONTROLS_j^c + \varepsilon_j^c \end{aligned} . \qquad (13)$$

The above regressions are run on a sample of 1,304 industries (33 two-digit SIC industries) from 33 countries.[24] We only estimate specifications with oil reserves; we

[23] The data are available at http://faculty.chicagogsb.edu /luigi.zingales/research.

[24] Country oil reserves and predation do not enter (13) individually because we already control for country fixed effects. For the same reason, we exclude party orientation and elections variables from our analysis.

cannot use oil price as our dependent variables are averaged over the respective time periods. We control for interaction effects between the need for external financing and country financial development; and between intangible assets intensity and country risk of government expropriation. In the growth regressions, we also include the beginning period (year 1980) level of value-added to account for initial growth conditions.

Table XI

Industry capital allocation efficiency and industry growth of oil price-dependent industries conditional on predation and autocracy.

Regressions of industry capital allocation efficiency and industry growth on interactions of oil price-dependency with country oil reserves and predation or autocracy with industry and country fixed effects, and robust standard errors.

This table reports the results of OLS regressions of capital allocation efficiency (Panel A) or industry growth (Panel B). The independent variables are: interaction term of industry oil price-dependency with country oil reserves and country predation or autocracy; industry oil price-dependency with country oil reserves; industry oil price-dependency with predation or autocracy; country oil reserves with predation or autocracy; industry external financing needs with country financial development; industry intangibles intensity with risk of expropriation; and industry share of value-added. All regressions include industry and country fixed effects. All regression coefficients are multiplied by 10. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Industries from the U.S. are dropped from the sample. The variables are defined in Table II.

dependent variable	**Panel A: capital allocation efficiency**		**Panel B: industry growth**	
country measures	*predation*	*autocracy*	*Predation*	*autocracy*
oil price-dependency × oil reserves × predation or autocracy	**-0.01967**	**-0.01632**	**-0.02416**	**-0.06045**
	(0.02)	(0.05)	(0.05)	(0.04)
oil price-dependency × oil reserves	0.60127	0.34103	-0.19346	-0.01488
	(0.13)	(0.36)	(0.20)	(0.91)
oil price-dependency × predation or autocracy	**-0.0207**	**-0.0227**	0.4638	0.3905
	(0.04)	(0.02)	(0.25)	(0.25)
external financing need × financial development	0.4006	0.4611	**0.6410**	**0.6665**
	(0.23)	(0.16)	(0.01)	(0.01)
intangibles intensity × expropriation	0.0080	0.0075	**-0.0217**	**-0.0225**
	(0.52)	(0.55)	(0.03)	(0.02)
industry share of value-added	-	-	**-8.6418**	-8.4089
			(0.00)	(0.84)
Industry fixed effects	included	Included	Included	included
Country fixed effects	included	Included	Included	included
R^2	0.161	0.159	0.327	0.323
number of observations	1,034	1,034	1,016	1,034
Number of industries	33	35	33	35
Number of countries	39	39	39	39

In Table XI, we test the hypothesis that more oil price-dependent industries exhibit worse capital allocation and slower growth in value-added in more predatory or autocratic countries, especially if those countries are abundant in natural resources. Each regression contains industry- and country- specific effects. The reported *p-values* are calculated using heteroscedasticity-adjusted robust standard errors.

Panel A reports the results of the regression when the dependent variable is capital allocation efficiency. The main variable of interest is the triple interaction effect between industry oil price-dependency, country oil reserves, and country predation index or autocracy index. The coefficient on the interaction variable is negative and significant independently of whether predation or autocracy index is used. Thus the elasticity of investment with respect to value-added is lower for oil price-dependent industries in more predatory countries with larger oil reserves. This is consistent with our conjecture that capital allocation is worse for industries in countries with lower institutional development, especially when the industries are located in resources-abundant countries. In all regressions, we control for the double interaction effects, which include the interactions between industry oil dependency with predation and oil dependency with country oil reserves. The interaction between oil price-dependency and predation index is significant. The sign of this coefficient is negative indicating that oil price-dependent industries exhibit worse capital allocation independent of countries' oil reserves. The interaction effects of external financing with financial development as well as intangibles intensity with expropriation risk turn out insignificant.

The results of the growth regressions appear in Panel B of Table XI. They are also consistent with the resource curse argument. The triple interaction effect is negative and significant showing a significantly slower growth of oil price-dependent industries in oil-rich countries with more predatory or autocratic governments. Consistent with Rajan and Zingales (1998), more financially-dependent industries grow faster in better-financially developed countries. We also reconfirm the result of Claessens and Lauven (2003) that industries with a greater proportion of intangible assets grow faster in countries where property rights are secure. This is evident from the negative and

significant coefficient on the interaction term between intangibles intensity and the risk of expropriation.[25]

According to the regression results, more expropriation-prone industries grow much slower in countries with predatory policies. Compare the same industries (oil and agriculture) in Venezuela (predation = 3.984) and Norway (predation = 0.138). The oil and gas extraction industry in Venezuela grows slower by 1.3% compared to the agriculture industry. In Norway, the differential growth rate between the oil and gas extraction and the agriculture industries would be negligible.[26]

VI. Robustness Checks and Alternative Explanations

A. Robustness

Our results can be biased because the sensitivity of industry valuation with respect to oil prices is a noisy proxy for expropriation risk. Presumably, other industries (e.g., mining) are vulnerable to expropriation when commodity prices are high. Another source of bias may arise because oil price sensitivity does not differentiate between demand-driven and supply-driven oil shocks. For example, when oil price increases because of an increase in demand, oil refineries become more profitable. On the contrary, a supply shock to oil production reduces their profit margin.

To address these issues, we run regression (5) using other commodities. The commodities price data come from the Bureau of Commodity Research (BCR).[27] The BCR tracks the prices of 22 commodities which are grouped into 7 indexes: metals, raw industrials, textiles, foods, fats, livestock, and a composite commodities index. The prices used in the index are obtained from trade publications and government agencies. Although the sub-indexes are highly correlated among each other, the sensitivities of industrial profitability to particular commodity indexes are not. For example, oil-price

[25] The magnitude and the significance of coefficients remain virtually unchanged when we control for oil price volatility in (12).

[26] It is calculated as $GROWTH_{oil} - GROWTH_{agriculture} = 3.984 \times (-0.00197) \times [0.049 - (-0.428)] \times 3.375 = -0.013$ for Venezuela. For Norway, it is $0.138 \times (-0.00197) \times [0.049 - (-0.428)] \times 3.375 = 0.00044$. The numbers are evaluated for the mean value of oil reserves (3.375).

[27] The data are available at http://www.crbtrader.com/.

sensitivity is positively and significantly correlated with sensitivities constructed using metals, industrials and the composite commodity index. It is uncorrelated with textiles, foods, fats, and livestock commodity indexes.

Table XII summarizes main regression results with the seven sensitivities described above. To save space we only report the coefficient on the interaction term of commodity price sensitivity with the log of commodity price and country variables (predation, autocracy, party orientation, and elections). The coefficients correspond to the first column of Tables VI-IX. For comparison, the first row of Table XII contains the coefficients in the triple interaction term reported in Tables VI-IX. The coefficients of the right sign (positive) and significant at 10% are in bold face. It is apparent that the results holds for the composite commodity index. All four coefficients are positive and significant. It is driven mostly by metals and industrials. Interestingly, textiles, foods, fats, and livestock do not affect opacity in any consistent way. These results are broadly consistent with Boschini et al. (2006) who show that the resource curse is mostly driven by mineral resources (especially by oil, diamonds and precious metals) rather than by agricultural resources.

Table XII
Robustness check using sensitivity measures based on various commodities prices.

This table reports the results of regression (5) using various commodity price sensitivities measures. The reported coefficients and *p-values* are reported for the triple interaction term between the sensitivity of industry profits with a corresponding commodity index price with the country variable and the log of commodity price. The commodity indexes are: composite, metals, industrials, textiles, foods, fats, livestock, and composite. Data for commodity prices come from the Bureau of Commodity Research. The dependent variable is aggregate opacity. The independent variables are: the interaction term of commodity (oil, metals, industrials, textiles, foods, fats, livestock, and composite) price-dependency with the natural log of commodity price and country variables (predation, autocracy, party orientation, or election year); industry commodity price-dependency with the natural log of commodity price; industry commodity price-dependency with a country variable; the natural log of commodity price with a country variable; industry external financing needs with a country variable; and a country variable, and external financing needs. All regression coefficients are multiplied by 100. The positive and significant coefficients (at the 10% level, based on a two-tailed test or higher) are in bold face. Industries from the U.S. are dropped from the sample.

		country variable			
		PREDATION	**AUTOCRACY**	**PARTY ORIENTATION**	**ELECTION YEAR**
	Oil	**0.781**	-0.105	**0.505**	**0.523**
		(0.09)	(0.67)	(0.00)	(0.01)
commodity index	**Composite**	**0.307**	**0.117**	**0.162**	0.093
		(0.00)	(0.10)	(0.00)	(0.15)
	Metals	**0.184**	**0.178**	**0.099**	**0.074**
		(0.00)	(0.03)	(0.00)	(0.00)
	Industrials	**0.206**	-0.152	**0.115**	**0.091**
		(0.00)	(0.22)	(0.00)	(0.05)
	Textiles	0.011	**0.170**	-0.006	**0.057**
		(0.34)	(0.02)	(0.10)	(0.05)
	Foods	-0.122	-0.059	-0.008	0.069
		(0.00)	(0.22)	(0.20)	(0.34)
	Fats	**0.126**	-0.057	-0.097	-0.077
		(0.00)	(0.22)	(0.05)	(0.38)
	Livestock	0.145	-0.038	**0.198**	-0.086
		(0.23)	(0.22)	(0.00)	(0.15)

B. Alternative Explanations

The empirical facts we have presented are consistent with our predictions – companies increase opacity in response to government predatory actions. In this section, we consider alternative interpretations and try to reject them.

First, according to our interpretations, companies strategically withhold information in response to the risk of expropriation. However, one could argue that causality runs in the opposite direction. Specifically, more opaque companies, especially government monopolies, may try to secure natural resources rents by lobbying for the type of

government that would set up inefficient institutions.[28] This view, nonetheless, would be inconsistent with the findings by Kolotilin (2007) who shows that oil companies are under a greater risk of nationalization by governments in countries with imperfect institutions. Moreover, our results indicate that the effect of predation on opacity is actually larger when countries are rich in oil and when oil prices are high. Moreover, controlling for country and industry fixed effects and other relevant variables, the correlation between opacity and predation per se is not significant. One more argument which supports our explanation and contests the reverse causality arguments is the evidence from the election years. We show that opacity increases during the election years, which, in most countries, follow an exogenous cycle with respect to firm opacity.

Second, it could be the case that some of our results are driven by changes in firms' fundamentals in response to economic shocks. For example, high oil prices may stabilize firms' fundamentals. More stable fundamentals, in turn, affect the measure of informational opacity, since firms with more stable earnings are also likely to have similar returns. This reasoning, however, would affect only one out of three opacity measures, namely the informational opacity. There is no reason to expect that the other two measures of opacity (insider opacity and accounting opacity) are affected by changes in firm fundamentals. Nevertheless, we check the robustness of the results by directly controlling for firms' fundamentals stability. We measure it as the coefficient of determination (R^2) of the following regression,

$$ROA_{i,t}^{c} = \alpha_{i}^{c} + \beta_{1,i}^{c} ROA_{m,t}^{c} + \beta_{2,i}^{c} ROA_{m,t}^{US} + \varepsilon_{i,t}^{c} \qquad (14)$$

where ROA_i is the return on assets for company i, ROA_m is the value-weighted average of ROA across all firms in country c, and $ROA_{m,t}^{US}$ is the value-weighted average of ROA across U.S. firms. The above regression is calculated for each firm starting year 2000 using a ten-year rolling-window data. We then aggregate this measure by taking

[28] Rajan and Zingales (2003) show that incumbent companies can use laws and regulations to their advantage by hindering financial development that would otherwise benefit young companies.

industry averages. The main results reported above remain unchanged with this additional control.

Third, although we hope that industry fixed effects are adequate to control for industry unobserved characteristics, we can never be sure that our results are not driven by missing industry factors. Private businesses, including oil price-dependent firms can reduce the risk of government expropriation by becoming more indispensable to the rulers. This can be achieved, for example, by seeking greater internationalization, securing higher levels of short-term debt, using more tangible assets, and/or hiring more employees. To check the robustness of our results, we explicitly control for the aforementioned factors.

Companies with greater international exposure may be more immune to government expropriation. For example, when shareholder rights are violated, investors can file claims in international rather than local courts (Doidge, Karolyi, and Stulz (2003); Siegel (2005)). To control for internalization we include the cross-listing dummy variable and the value of exports relative to sales. Companies can also alter their capital structure to elude government capture. It is established that debt rather than equity, and in particular short-term debt, is a main source of financing in developing countries (see, e.g., Harvey, Lins, and Roper (2004) and Fan, Titman, and Twite (2005)). Short-term debt can serve not only as a monitoring device but also as an instrument to make state capture costlier (Stulz (2005)). Consequently, we control for the level of short-term debt (past ratio of short-term debt to sales). Fixed assets are harder to expropriate (Claessens and Laeven (2003); Klapper and Love (2004)). Thus we also control for fixed assets proxied by the past ratio of property, plant, and equipment to sales. Finally, firms that employ more workers would presumably suffer less from government interference because unemployment-conscious governments are less likely to bring a firm to bankruptcy. We control for employment by the ratio of the number of employees to sales. Our results are robust to the inclusion of these variables.

Fourth, firms' ownership structure may matter. For instance, firms in more predatory countries may seek to appoint politicians as the members of their boards to

avoid government capture.[29] Moreover, firms with state ownership are under a lower risk of government expropriation. We do not control for ownership in our regressions because international time-series ownership data are very scant. However, we reckon that controlling for ownership should make our results even stronger. We are less likely to observe our results without including ownership variables because state-owned firms or firms with political connections are likely to be less opaque under more predatory regimes. Nevertheless, we perform one robustness test by dropping firms with a large ownership block by governments (ownership greater than 10%) and find that none of the reported results are affected.

Finally, to ascertain that the results are not driven by a specific country, we repeat all regression by recursively dropping one country at a time from the sample. We find similar patterns in the magnitudes and significance levels of the coefficients reported in Tables VI-IX and Table XI.

[29] Faccio (2005) examines the value of political loyalty and finds a positive valuation effect when corporate directors belong to ruling parties. Faccio, Masulis, and McConnell (2006) document that politically-connected firms are more likely to be bailed out during financial distress. Leuz and Oberholzer (2006) study the role of political ties for firms' financing strategies and their long-run financial performance. They find that firms with political connections are less likely to rely on publicly traded securities. Bertrand et al. (2006) investigate the origins of political ties and argue that privatized firms with greater government residual ownership are more likely to become politically loyal.

VII. Related Literature

Our paper is related to three streams of literature. First, there is the resource curse literature which focuses on the effects of resource abundance and institutions on economic growth. Second, there is literature on the political economy of corporate governance that shows that imperfect political institutions may result in inefficient disclosure and suboptimal corporate governance. Third, there are studies that examine the implications of corporate governance and disclosure for efficiency and growth at the firm level.

Sachs and Warner (1997) were first to show that the share of primary resources in exports negatively affects economic growth in standard growth regressions. Early studies have attributed this phenomenon to the macroeconomic "Dutch disease": Krugman (1987) considers a model with dynamic economies of scale where the negative effect of resource abundance on the competitiveness of manufacturing sector may have long-term implications.

However, the recent literature (Lane and Tornell, 1996, Ades and Di Tella, 1999, Auty, 2001, Robinson, Torvik, and Verdier, 2006, Mehlum, Moene, and Torvik, 2006, Caselli, 2006, Hodler, 2006, and Boschini et al., 2006) shows that the negative effect of resource abundance on growth is related to the deterioration of economic and political institutions. In particular, Mehlum, Moene, and Torvik (2006) find that in countries with mature institutions, natural resources have no significant impact on economic growth; if anything, the effect is positive. However, if institutions are underdeveloped, resource abundance negatively and significantly affects growth. Resource rents create incentives for the political elite to engage in rent-seeking rather than productive activities, and suppress the development of property rights, and of governmental checks and balances. The latter effect is also documented by Tsui (2005) who shows that an unexpected discovery of oil reduces the level of democracy in a country in the subsequent 30 years. Using a panel of countries Egorov, Guriev, and Sonin (2007) show that controlling for country fixed effects, oil richness implies lower media freedom. Kolotilin (2007) finds

that nationalization of private oil companies is more likely in countries with imperfect political institutions, and when oil prices are high. Using the case of Russian oil export, Berkowitz and Semikolenova (2006) argue that an increase in tax revenue due to high oil prices enables governments to delay institutional reforms. Boschini et al. (2006) show that the negative effect of resource abundance on growth depends on the extent of the resources' "appropriability." As rents from mining oil, diamonds, and precious metals are easier to capture than the rents in agricultural production, the countries richer in the former resources are more vulnerable to the resource curse.

The literature also identifies the human capital channel of the resource curse. Gylfason (2001) argues that natural resource abundance reduces incentives for accumulating human capital thus suppressing long-term growth rates. Suslova and Volchkova (2007) use the Rajan-Zingales methodology (similar to the methodology used in this paper) to provide microeconomic evidence supporting this conjecture.

Most of the empirical resource curse literature faces serious methodological problems. As institutions change very slowly, the empirical analysis is generally conducted using cross-country Ordinary Least Squares regressions that are vulnerable to multiple biases. The few exceptions using the panel data and Instrumental Variables estimation include the abovementioned Tsui (2005), Egorov et al. (2007), and Suslova and Volchkova (2007). We contribute to this research stream using the Rajan-Zingales within-country method and supplement it by taking advantage of the time variation in the expropriation risk.

The literature on the effects of political institutions on corporate governance is related to the classical political theories described in North (1990) and Olson (1993). These theories contend that individuals and governments who hold authority shape policies to increase their chances to stay in power and accumulate wealth. According to Rajan and Zingales (2003), centralized and closed governments can achieve these goals by constraining financial development. Politicians can also suppress competition to maintain their economic advantage. For example, states might control information (especially firm-specific information) to hide expropriation by politicians. Moreover, the deals between some firms and governments require opaqueness. Chaney, Faccio, and

Parsley (2007) find that the quality of earnings reported by politically-connected firms is significantly poorer than that of similar non-connected companies. Additionally, among connected firms, those that have stronger political ties have the poorest accruals quality. This evidence suggests that managers of connected firms appear to be less sensitive to market pressures to increase the quality of information.

The other effect of political economy on corporate governance is described by Volpin and Pagano (2005). They provide a model in which left governments implement laws that protect labor and right governments are more likely to favor governance and investor protection. Several papers incorporate a regulator into a traditional manager-shareholder model and examine how managerial incentives change when companies avoid taxes through various tax sheltering schemes. Specifically, Desai, Dyck, and Zingales (2007) show that stricter tax enforcement improves firm governance because enforcement involves the verification of financial statements' numbers. Desai and Dharmapala (2004, 2006) investigate how firm governance interacts with firm incentives to use tax shelters and the impact of tax sheltering on firm valuation. In their models, sheltering raises shareholder wealth for firms with strong governance. Stulz (2006) models the complementary relation between managerial diversion and state expropriation and discusses how state quality affects investment strategies and corporate ownership.

The third stream of literature investigates the relationship between investor protection, firm governance, financial markets development, and economic growth. It is shown that better legal protection for investors is associated with higher valuation of the stock market (La Porta et al., 2002). Recent firm-level studies also shows that good corporate governance implemented by individual firms yields higher returns for shareholders, making the effort of improving governance worth the cost (Doidge, Karolyi, and Stulz, 2003; Gompers, Ishii, and Metrick, 2003, Klapper and Love, 2004, Durnev and Kim, 2005; Black, Jang, and Kim, 2006, Black, Love, and Rachinsky, 2006, Aggarwal et al., 2007; Chhaochharia and Laeven (2007)).

Our paper connects all the three streams of literature as we build a consistent microeconomic argument linking resource abundance, poor property rights protection,

incentives to withhold information, and slower growth. We show that this argument is empirically supported by results using the data on 72 industries from 51 countries and 16 years.

VII. Concluding Remarks

In this paper, we propose and test a new channel through which the abundance of natural resources can reduce economic growth. Specifically, corporations in industries whose profitability is highly correlated with the price of natural resources are at risk of profits expropriation. Companies can lessen this risk by reducing corporate transparency by hiding profits or managing earnings. Lower corporate transparency, in turn, leads to inefficient capital allocation, which hampers economic growth.

For the empirical tests, we construct an index of corporate opacity which consists of three attributes: accounting opacity, insider opacity, and informational opacity. We use industry oil price-dependency (the sensitivity of industry profits to oil prices) to proxy for the risk of government intervention. Our sample consists of 25,854 industry-year observations from 51 countries. Controlling for country, industry, and year fixed effects, we find that more oil price-dependent industries are less transparent in countries with more autocratic regimes or countries where institutions are less developed. This effect is stronger in countries where and when the oil rents are higher – in countries with larger reserves of oil and when oil prices are high.

We also explore the role of political cycles and elections in determining corporate transparency. It turns out that oil price-dependent industries are more opaque when the head of state's political party's orientation is left rather than right and during national elections, that is, when uncertainty about future government policies is higher. This result is consistent with the notion that leftist governments favor redistributive policies.

Next, we investigate whether corporate opacity of oil price-dependent industries has a significant impact on investment efficiency and growth. Economic growth requires efficient allocation of capital. The quality of capital allocation, in turn, depends on the capital markets' ability to process information efficiently. We find strong evidence that

corporate opacity induced by government predatory policies and oil price-dependency has adverse effects on industrial capital allocation and growth. Specifically, the sensitivity of investment with respect to value-added as well as the rate of growth in value-added are significantly lower in more oil price-dependent industries in countries with weaker property rights. The results are robust to adding a variety of controls and alternative specifications.

Our results therefore support the emerging consensus that slower growth in resource-rich economies may be explained by the negative impact of resource endowments on the development of economic and political institutions, which in turn suppresses economic growth. Our main contribution is empirical. Unlike existing sources, which are mostly based on cross-country comparisons, we use an industry-country-year panel. We examine the effect of government predation on corporate transparency, capital allocation, and growth in resource industries at the microeconomic level controlling for industry- and country-specific effects.

References

Ades, A., and R. Di Tella, 1999, Rents, competition and corruption, *American Economic Review* 89, 982-993.

Aggarwal, R., I. Erel, R. Stulz, and R. Williamson, 2007, Do U.S. firms have the best corporate governance? A cross-country examination of the relation between corporate governance and shareholder wealth, Working paper, Ohio State University.

Aggarwal, R., and G. Wu, 2006, Stock market manipulations, *Journal of Business* 79, 1915-1953.

Auty, R., 2001. *Resource Abundance and Economic Development* (Oxford University Press, Oxford, U.K.).

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

Beck, T., and R. Levine, 2002, Industry growth and capital allocation: Does having a market- or bank-based system matter?, *Journal of Financial Economics* 64, 147-180.

Berkowitz, D., and Y. Semikolenova, 2006, Privatization with government control: Evidence from the Russian oil sector, Working paper, University of Pittsburgh.

Bertrand, M., and S. Mullainathan, 2003, Do CEOs set their own pay? The ones without principals do, NBER Working paper #7604.

Bertrand, M., F. Kramarz, A. Schoar, and D. Thesmar, 2006, Politically connected CEOs and corporate outcomes: Evidence from France, Working paper, University of Chicago.

Black, B., H. Jang, and W. Kim, 2006, Does corporate governance predict firms' market values? Evidence from the Korean market, *Journal of Law, Economics, and Organization* 22, 366-413.

Black, B., I. Love, and A. Rachinsky, 2006, Corporate governance and firms' market values: Time series evidence from Russia, *Emerging Markets Review* 7, 361-379.

Boone, P., and D. Rodionov, 2002. *Rent seeking in Russia and the CIS (*Brunswick UBS Warburg, Moscow).

Boschini, A., J. Pettersson, and J. Roine, 2006, Resource curse or not: A question of appropriability, Working paper, Stockholm School of Economics.

Botero, J., S. Djankov, R. La Porta, and F. Lopez-de-Silanes, 2004, The regulation of labor, *Quarterly Journal of Economics* 119, 1339-1382.

Breusch, T. S., and A. Pagan, 1980, The Lagrange multiplier test and its applications to model specification in econometrics, *The Review of Economic Studies* 47, 239-253.

Bruno, V., and S. Claessens, 2007, Corporate governance and regulation: Can there be too much of a good thing? Working paper, The World Bank.

Buchanan, J., and G. Tullock, 1962. *The Calculus of Consent Logical Foundations of Constitutional Democracy* (University of Michigan Press, Ann Arbor, MI).

Caselli, F., 2006, Power struggle and the natural resource curse, Working paper, London School of Economics.

Chaney, P., M. Faccio, and D. Parsley, 2007, The quality of accounting information in politically connected firms, Working paper, Purdue University.

Chhaochharia, V., and L. Laeven, 2007, The invisible hand in corporate governance, Working paper, The World Bank.

Claessens, S., and L. Laeven, 2003, Financial development, property rights, and growth, *Journal of Finance* 58, 2401-2436.

Dechow, P., 1994, Accounting earnings and cash flow as measures of firm performance: The role of accounting accruals, *Journal of Accounting and Economics* 18, 3-42.

Dechow, P., R. Sloan, and A. P. Sweeney, 1995, Detecting earnings management, *The Accounting Review* 70, 193-225.

Desai, M., and D. Dharmapala, 2004, Corporate tax avoidance and firm value, Working paper, National Bureau of Economic Research.

Desai, M., and D. Dharmapala, 2006, Corporate tax avoidance and high-powered incentives, *Journal of Financial Economics* 79, 145-179.

Desai, M., A. Dyck, and L. Zingales, 2007, Theft and taxes, *Journal of Financial Economics* 84, 591-623.

Dinç, S., 2005, Politicians and banks: Political influences on government-owned banks in emerging countries, *Journal of Financial Economics* 77, 453-479.

Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer, 2002, The regulation of entry, *Quarterly Journal of Economics* 117, 1-37.

Doidge, C., G. A. Karolyi, and R. Stulz, 2003, Why are foreign firms listed in the U.S. worth more? *Journal of Financial Economics* 71, 205-238.

Durnev, A., and E. H. Kim, 2005, To steal or not to steal: Firm attributes, legal environment, and valuation, *Journal of Finance* 60, 1461-1493.

Durnev A., R. Morck, and B. Yeung, 2004, Value enhancing capital budgeting and firm-specific return variation, *Journal of Finance* 59, 65-105.

Egorov, G., S. Guriev, and K. Sonin, 2007, Media freedom, bureaucratic incentives, and the resource curse, Working paper, Harvard University.

Fan, J., S. Titman, and G. Twite, 2005, An international comparison of capital structure and debt maturity choices, Working paper, The Chinese University of Hong Kong.

Faccio, M., R. Masulis, and J. McConnel, 2006, Political connections and corporate bailouts, *Journal of Finance* 61, 2597-2635.

Fernandes, N., and M. Ferreira, 2006, Insider trading laws and stock price informativeness, Working paper, CEMAF/ISCTE.

Fisman, R., 2001, Estimating the value of political connections, *American Economic Review* 91, 1095-1102.

Freeland, C., 2000. *Sale of the Century: Russia's Wild Ride from Communism to Capitalism* (Crown Business, New York, NY).

Friedman, E., S. Johnson, D. Kaufmann, and P. Zoido-Lobaton, 2000, Dodging the grabbing hand: The determinants of unofficial activity in 69 countries, *Journal of Public Economics* 76, 459-493.

Gagnon, L. G. , G. A. Karolyi, and K-H. Lee, 2007, The dynamic volume-return relationship of individual stocks: The international evidence, working paper, Ohio State University.

Gompers, P., J. Ishii, and A. Metrick, 2003, Corporate governance and equity prices, *Quarterly Journal of Economics* 118, 107-155.

Goriaev, A., and K. Sonin, 2006, Is political risk company-specific? The market side of the YUKOS affair, Working paper, New Economic School.

Grishchenko O., L. Litov and J. Mei, 2003, Private information trading and corporate governance in emerging markets, Working paper, New York University.

Gylfason, T., 2001, Natural resources, education, and economic development, *European Economic Review* 45, 847-859.

Harvey, C., K. Lins, and A. Roper, 2004, The effect of capital structure when expected agency costs are extreme, *Journal of Financial Economics* 74, 3-30.

Hodler, R., 2006, The curse of natural resources in fractionalized countries, *European Economic Review* 50, 1367-1386.

Klapper, L., and I. Love, 2002, Corporate governance, investor protection, and performance in emerging markets, *Journal of Corporate Finance* 10, 703-728.

Knack, S., 1999, Aid dependence and the quality of governance, IRIS Center Working Paper, University of Maryland.

Kobrin, S., 1980, Foreign enterprise and forced divestment in LDCs, *International Organization* 34, 65-88.

Kobrin, S., 1984, Expropriations as an attempt to control foreign firms in LDCs: Trends from 1960 to 1979, *International Studies Quarterly* 28, 329-348.

Kolotilin, A., 2007, Is high price a good news? Determinants of oil industry nationalization, Working paper, New Economic School.

Kondaurov, Aleksei, Los Angeles Times, December 19, 2004.

Krugman, P., 1987, The narrow moving band, the Dutch Disease, and the economic consequences of Mrs. Thatcher: notes on trade in the presence of dynamic scale economies, *Journal of Development Economics* 27, 41-55.

Lamont, O., 1997, Cash flow and investment: Evidence from internal capital markets, *Journal of Finance* 52, 83-109.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny, 2002, Investor protection and corporate valuation, *Journal of Finance* 57, 1147-1170.

Lane, P., and A. Tornell, 1996, Power, growth and the voracity effect, *Journal of Economic Growth* 1, 213--241.

Leuz, C., and F. Oberholzer-Lee, 2006, Political relationships, global financing, and corporate transparency: Evidence from Indonesia, *Journal of Financial Economics* 81, 411-439.

Llorente G., R. Michaely, G. Saar and J. Wang, 2002, Dynamic volume-return relation of individual stocks, *Review of Financial Studies* 15, 1005-1047.

Mehlum, H., K. O. Moene, and R. Torvik, 2006, Institutions and the resource curse, *Economic Journal* 116, 1--20.

Marshall, M., and K. Jaggers, 2006. Political Regime Characteristics and Transitions, 1800-2004 Dataset Users' Manual. Polity IV Project, (University of Maryland, College Park, MD).

Morck, R., B. Yeung, and W. Yu, 2000, The information content of stock markets: Why do emerging markets have synchronous stock price movements?, *Journal of Financial Economics* 58, 215-260.

North, D., 1990. *Institutions, Institutional Change and Economic Performance* (Cambridge University Press, Cambridge, U.K.).

Olson, M., 1993, Dictatorship, democracy, and development, *American Political Science Review* 87, 567-576.

Rajan, R., and L. Zingales, 1998, Financial dependence and growth, *American Economic Review* 88, 559-586.

Rajan, R., and L. Zingales, 2003, The great reversals: The politics of financial development in the 20th Century, *Journal of Financial Economics* 69, 5-50.

Robinson, J., R. Torvik, and T. Verdier, 2006, Political foundations of the resource curse, *Journal of Development Economics* 79, 447-468.

Russia Profile Magazine, March 2007, 37.

Sachs, J., and A. Warner, 1997, Fundamental sources of long run growth, *American Economic Review Papers and Proceedings* 87, 184-88.

Siegel, J., 2005, Can foreign firms bond themselves effectively by renting U.S. securities laws?, *Journal of Financial Economics* 75, 319-356.

Schipper, K., 1989, Commentary on earnings management, *Accounting Horizons* 3, 91-102.

Shivakumar, L., 2000, Do firms mislead investors by overstating earnings before seasoned equity offerings?, *Journal of Accounting and Economics* 29, 339-371.

Smith, A., 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations* (Edinburgh, U.K.).

Stulz, R., 2005, The limits of globalization, *Journal of Finance*, 60, 1595-1638.

Suslova, E., and N. Volchkova, 2007, Human capital, industrial growth, and resource curse, Working paper, New Economic School.

Tsui, K., 2005, More oil, less democracy? Theory and evidence from crude oil discoveries, Working paper, University of Chicago.

Verrecchia, R., 2001, Essays on disclosure, *Journal of Accounting and Economics* 32, 97-180.

Volpin, P., and M. Pagano, 2005, The political economy of corporate governance, *American Economic Review* 95, 1005-1030.

Watts, R., and J. Zimmerman, 1986. *Positive Accounting Theory* (Prentice-Hall, Englewood Cliffs, NJ).

Wurgler, J., 2000, Financial markets and the allocation of capital, *Journal of Financial Economics* 58, 187-214.

Table I
Election Cycles, 1990-2004

This table lists the types of political systems (presidential or parliamentary), the government chief executive's party orientation during the sample period (left, right, or center), years and dates of the elections of government chief executives. Data source: World Bank's Database of Political Institutions supplemented with information from the *Journal of Democracy*, *Elections around the World* (http://www.electionworld.org/), *Election Guide* (http://www.electionguide.org/), and the *CIA Factbook*. "NA" appears for cases in which the exact party orientation cannot be determined.

country	system	party orientation	elections years	elections dates	country	system	party orientation	elections years	elections dates	country	System	party orientation	elections years	elections dates
Argentina	Presidential	1990-1995: R	-	-	Indonesia	Parliamentary	1990-1992: NA	-	-	Portugal	Parliamentary	1990-1991: R	-	-
		1996-1999: R	1995	14-May-95			1993-1996: NA	1992	9-Jun-92			1992-1995: R	1991	6-Oct-91
		2000-2001: C	1999	24-Oct-99			1998-1999: NA	1997	30-May-97			1996-1999: L	1995	1-Oct-95
		2002-2003: R	-	-			200-2004: NA	1999	NA			2000-2002: L	1999	10-Oct-99
		2004: R	2003	27-Apr-03			-	2004	20-Sep-04			2003-2004: R	2002	17-Mar-02
Australia	Parliamentary	1990-1992: L	1990	24-Mar-90	Ireland	Parliamentary	1990-1992: C	-	-	Russia	Parliamentary	1990-1991: L	-	-
		1993-1996: L	1993	13-Mar-93			1993-1994: C	1992	25-Nov-92			1992-1996: NA	1991	12-Jun-91
		1997-1998: R	1996	2-Mar-96			1995-1997: R	-	-			1997-2000: NA	1996	16-Jun-96
		1999-2001: R	1998	3-Oct-98			1998-2002: C	1997	6-Jun-97			2001-2004: NA	2000	26-Mar-00
		2002-2004: R	2001	10-Nov-01			2003-2004: C	2002	18-May-02			-	2004	14-Mar-04
		2005-2006: L	2004	9-Oct-04	Israel	Parliamentary	1990-1992: R	-	-	Singapore	Parliamentary	1990-1991: NA	-	-
Austria	Parliamentary	1990-1994: L	1990	7-Oct-90			1993-1996: L	1992	19-Jun-92			1992-1997: NA	1991	31-Aug-91
		1995-1995: L	1994	9-Oct-94			1997-1999: R	1996	31-May-96			1998-2001: NA	1997	2-Jun-97
		1996-1999: L	1995	17-Dec-95			2000-2001: R	1999	31-May-99			2002-2004: NA	2001	23-Sep-01
		2000-2002: R	1999	3-Oct-99			2002-2004: R	2001	6-Feb-01	South Africa	Parliamentary	1990-1994: R	-	-
		2003-2004: R	2002	24-Nov-02	Italy	Parliamentary	1990-1992: C	-	23-Jun-92			1995-1999: L	1994	26-Apr-94
Belgium	Parliamentary	1990-1995: R	1991	24-Nov-91			1993-1994: L	1992	5-Apr-92			2000-2004: L	1999	2-Jun-99
		1996-1999: R	1995	21-May-95			1995-1996: R	1994	26-Mar-94			-	2004	14-Apr-04
		2000-2003: R	1999	13-May-99			1997-2001: C	1996	21-Apr-96	South Korea	Presidential	1990-1992: R	-	-
		2004: R	2003	18-May-03			2002-2004: R	2001	15-May-01			1993-1995: R	1992	24-Mar-92
Brazil	Presidential	1990-1994: R	1989	-	Japan	Parliamentary	1990: R	1986	7-Jul-86			1996-2000: C	1996	11-Apr-96
		1995-1998: L	1994	3-Oct-94			1991-1993: R	1990	18-Feb-90			2001-2004: C	2000	13-Apr-00
		1999-2002: L	1998	4-Oct-98			1994: R	1993	18-Jul-93			-	2004	15-Apr-04
		2003-2004: L	2002	6-Oct-02			1995-1996: L	-	-	Spain	Parliamentary	1990-1993: L	-	-
Canada	Parliamentary	1990-1993: R	1988	21-Nov-88			1997-2000: R	1996	20-Oct-96			1994-1996: L	1993	6-Jun-93
		1994-1997: L	1993	25-Oct-93			2001-2003: R	2000	25-Jun-00			1997-2000: R	1996	3-Mar-96
		1998-2000: L	1997	13-Apr-90			2004: R	2003	9-Nov-03			2001-2004: R	2000	12-Mar-00
		2001-2004: L	2000	27-Nov-00	Luxembourg	Parliamentary	1990-1994: C	-	-			-	2004	14-Mar-04
		2005: L	2004	28-Jun-04			1995-1999: C	1994	12-Jun-94	Sri Lanka	Presidential	1990-1994: C	-	-
Chile	Presidential	1990-1993: R	1989	-			2000-2004: C	1999	13-Jun-99			1995-1999: L	1994	9-Nov-94
		1994-1999: R	1993	11-Dec-93				2004	13-Jun-04			2000-2004: L	1999	21-Dec-99
		2000-2004: R	2000	16-Jan-00	Malaysia	Parliamentary	1990: NA	-	-	Sweden	Parliamentary	1990-1991: L	-	-
China	NA	1990-2004: L	-	-			1991-1995: NA	1990	21-Oct-90			1992-1994: R	1991	15-Sep-91
Colombia	Presidential	1990-1994: C	1990	27-May-90			1996-1999: NA	1995	24-May-95			1995-1998: L	1994	18-Sep-94
		1995-1998: C	1994	29-May-94			2000-2003: NA	1999	29-Nov-99			1999-2002: L	1998	20-Sep-98
		1999-2002: R	1998	31-May-98				2004	21-Mar-04			2003-2004: L	2002	17-Sep-02
		2003-2004: NA	2002	26-May-02	Mexico	Presidential	1990-1994: L	-	-	Switzerland	Parliamentary	1991-1991: NA	-	-
Czech Rep.	Parliamentary	1990: L	-	24-Apr-90			1995-2000: L	1994	21-Aug-94			1992-1995: NA	1991	20-Oct-91
		1991-1992: NA	-	-			2001-2004: R	2000	2-Jul-00			1996-1999: NA	1995	22-Oct-95
		1993-1996: R	1992	6-Jun-92	Morocco	Presidential	1990-1993: NA	-	-			2000-2003: NA	1999	24-Oct-99
		1997-1998: R	1996	31-May-96			1994-1997: NA	1993	25-Jun-93			2004: R	2003	19-Oct-03
		1999-2001: L	1998	13-Nov-98			1998-2002: NA	1997	14-Nov-97	Taiwan	Parliamentary	1990-1992: R	-	-
		2002-2004: L	2002	14-Jun-02			2003-2004: NA	2002	27-Sep-02			1993-1996: R	1992	9-Dec-92
Denmark	Parliamentary	1990-1993: R	1990	12-Dec-90	Netherlands	Parliamentary	1990-1991: R	-	-			1997-2000: R	1996	23-Mar-96

		1994-1997: L	1994	21-Sep-94			1992-1994: R	1991	NA			2001-2004: R	2000	18-Mar-00
		1998-2001: L	1998	11-Mar-98			1995-1998: L	1994	3-May-94			-	2004	20-Mar-04
		2001-2004: R	2001	20-Nov-01			1999-2002: L	1998	6-May-98	Thailand	Parliamentary	1990-1991: R	-	-
		1990-1995:												
Egypt	Parliamentary	NA	1990	29-Nov-90			2003: L	2002	15-May-02			1992: NA	-	-
		1995-2000:												
		NA	1995	29-Nov-95			2004: R	2003	22-Jan-03			1993-1995: R	1992	13-Sep-92
		2001-2007:												
		NA	2000	18-Oct-00	New Zealand	Parliamentary	1990: L	-	-			1996: R	1995	2-Jul-95
Finland	Parliamentary	1990: R	-	-			1990-1993: R	1990	27-Oct-90			1997-2000: R	1996	17-Nov-96
												2001-2004:		
		1991-1995: C	1991	17-Mar-91			1994-1996: R	1993	6-Nov-93			NA	2001	6-Jan-01
		1996-1999: L	1995	19-Mar-95			1997-1999: R	1996	12-Oct-96	Turkey	Parliamentary	1990-1991: R	-	-
		2000-2002: L	1999	21-Mar-99			2000-2002: L	1999	27-Nov-99			1992-1995: R	1991	20-Oct-91
		2003-2004: C	2003	16-Mar-03			2003-2004: L	2002	27-Jul-02			1996-1999: R	1995	24-Dec-95
France	Parliamentary	1990-1993: L	1988	9-May-88	Norway	Parliamentary	1990: R	-	-			2000-2002: L	1999	18-Apr-99
												2003-2004:		
		1994-1997: R	1993	21-Mar-93			1991-1993: L	-	-			NA	2002	3-Nov-02
		1998-2002: L	1997	25-May-97			1994-1997: L	1993	13-Sep-93	U.K.	Parliamentary	1990-1992: R	1987	12-Jun-87
		2003-2004: R	2002	16-Jun-02			1998-2001: R	1997	16-Sep-97			1993-1997: R	1992	9-Apr-92
Germany	Parliamentary	1990-1993: R	1990	3-Dec-90			2002-2004: R	2001	10-Sep-01			1998-2001: L	1997	1-May-97
		1994-1998: R	1994	16-Oct-94	Pakistan	Parliamentary	1990: L	-	-			2002-2004: L	2001	7-Jun-01
		1999-2002: L	1998	27-Sep-98			1991-1993: R	1990	24-Oct-90	U.S.	Presidential	1990-1992: R	1988	9-Nov-88
		2003-2004: L	2002	22-Sep-02			1994-1997: L	1993	6-Oct-93			1993-1996: L	1992	3-Nov-92
Greece	Parliamentary	1990: L	-	-			1998-2002: NA	1997	3-Feb-97			1997-2000: L	1996	5-Nov-96
		1991-1993: R	1990	8-Apr-90			2003-2004: NA	2002	10-Oct-02			2001-2004: R	2000	7-Sep-00
		1994-1996: L	1993	10-Oct-93	Peru	Presidential	1990: L	-	-			-	2004	2-Sep-04
		1997-2000: L	1996	22-Sep-96			1991-1995: R	1990	10-Jun-90	Venezuela	Presidential	1990-1993: R	-	-
												1994-1998:		
		2001-2004: L	2000	9-Apr-00			1996-2000: R	1995	9-Apr-95			NA	1993	5-Dec-93
												1999-2000:		
		-	2004	7-Mar-04			2001: R	2000	9-Apr-00			NA	1998	6-Dec-98
												2001-2004:		
Hong Kong	NA	NA	NA	NA			2002-2004: C	2001	8-Apr-01			NA	2000	30-Jul-00
												1990-1996:		
					Philippines	NA	1990-1992: NA	-	-	Zimbabwe	Parliamentary	NA	1990	27-Mar-90
												1997-2000:		
Hungary	Parliamentary	1990: L	-	-			1993-1998: C	1992	11-May-92			NA	1996	15-Mar-96
												2001-2002:		
		1991-1994: R	1990	25-Mar-90			1999-2000: NA	1998	11-May-98			NA	2000	-
												2003-2004:		
		1995-1998: L	1994	8-May-94			2001-2004: C	-	-			NA	2002	9-Mar-02
		1999-2002: L	1998	10-May-98			-	2004	10-May-04					
		2003-2004: L	2002	4-Apr-02	Poland	Presidential	1990: L	-	-					
India	Parliamentary	1990-1991: L	-	-			1991-1995: NA	1990	9-Dec-90					
		1992-1996: L	1991	1-May-91			1996-2000: L	1995	5-Nov-95					
		1997-1998: L	1996	21-Apr-96			2001-2005: L	2000	8-Oct-00					
		1999: R	1998	16-Feb-98										
		2000-2003: R	1999	5-Sep-99										
		-	2004	20-Apr-04										

Table II
Variables, definitions, and data sources

Variables	Definitions
Corporate opacity sample	
Oil price	This variable is the logarithm of inflation-adjusted (using Purchasing Price Index) oil price expressed in U.S. dollars per barrel. Data source: International Finance Statistics (IFS) of the International Monetary Fund.
Country oil reserves	Country oil reserves are expressed in tens of millions of barrels. Data source: 2007 BP Statistical Review.
Industry oil price dependency	Industry oil dependency is defined as a coefficient β^{SIC2} on the natural logarithm of oil price in a regression of industry inflation-adjusted valuation on time trend and log of real oil price, $Q_t^{SIC2} = \alpha^{SIC2} + t^{SIC2} + \beta^{SIC2} \ln\left(P_t^{oil}\right) + \mu_t^{SIC2}$, where *Q* is the median industry valuation (inflation-adjusted using Producer Price Index), α is a constant, *t* is the time trend, P^{oil} is inflation-adjusted price of oil, and μ is the error term. The above regression is estimated for every 2-digit SIC industry using a sample of U.S. publicly listed firms from the COMPUSTAT tapes from 1950 through 2005. Industry valuation is defined as the sum of firm market value (COMPUSTAT item #199 times #25), total assets (#6) minus firm book value of equity (#60) over firm total assets. Data source: COMPUSTAT North America industrial tapes.
Accounting opacity	The accounting opacity for firm *i* in country *j* is defined as the standard deviation of the error term of the following regression calculated over 1990-2005, $TCA_{i,t}^c / A_{i,t}^c = \alpha^c \Delta Sales_{i,t}^c / A_{i,t}^c + \beta^c PP\&E_{i,t}^c / A_{i,t}^c + \sum_{j \in J} D_j + \sum_{\tau \in [1990,2005]} D_\tau + \eta_{i,t}^c$, where Δ is the difference operator, *c* indexes countries, *i* indexes firms, and *t* indexes years. Total current accruals, *TCA*, are defined as *Δ(Current Assets) – Δ(Current Liabilities) – Δ (Cash) + Δ (Short-term and Current Long-term Debt)*; *A* is total assets, *Sales* is total sales, *PP&E* is the sum of net property, plant, and equipment, and accumulated reserves for depreciation, depletion and amortization. D_j are two-digit SIC industry fixed effects and D_τ are year fixed effects. All variables are expressed in U.S. dollars. We drop firms that have fewer than 5 observations to calculate this variable. Data source: Worldscope.
Insider opacity	Insider opacity is measures as coefficient C_2 in the time-series regression, $R_{i,t+1}^c = A_i^c + C_{i,1}^c R_{i,t}^c + C_{i,2}^c R_{i,t}^c V_{i,t}^c + \varepsilon_{i,t}^c$, run using weekly data for each firm *i* in country *c* during year *t* using at least 30 weeks of trading data from 1990 through 2005. Return $R_{i,t}$ is defined as $R_{i,t}^c = \mathbf{log}\left(\left(P_{i,t}^c + D_{i,t}^c\right) / P_{i,t}^c\right)$, where $P_{i,t}$ is the weekly closing price, and $D_{i,t}$ is dividends per share. Trading volume, $V_{i,t}$, is calculated as de-trended volume, $V_{i,t}^c = \mathbf{log}\left(VOL_{i,t}^c / N_{i,t}^c\right) - \frac{1}{20}\sum_{j=1}^{20} \mathbf{log}\left(VOL_{i,t-j}^c / N_{i,t-j}^c\right)$, where *VOL* is the number of shares traded, and *N* is the number of shares outstanding. All variables are measured in U.S. dollars. Data source: Datastream for closing price, number of shares outstanding, number of shares traded, and Worldscope for dividends.
Informational opacity	Informational opacity is defined as $\mathbf{ln}\left(R_i^{2,c} / (1 - R_i^{2,c})\right)$, where R^2 is the coefficient of determination of the following regression: $r_{i,t}^c = \alpha_i^c + \beta_{1,i}^c r_{m,t}^c + \beta_{2,i}^c r_{m,t}^{US} + \varepsilon_{i,t}^c$, where $r_{i,t}^c$ is firm *i*'s weekly return, $r_{m,t}^c$ is weekly value-weighted local market return, and $r_{m,t}^{US}$ is U.S. value-weighted market return. All returns are expressed in U.S. dollars. Local market and U.S. indexes exclude the firm in question to avoid spurious correlation between individual returns and indexes for markets with few firms. Data source: Datastream.
Aggregate opacity	Aggregate opacity is defined as the first principal component of accounting opacity, insider opacity, and informational opacity. The loadings for the principal component are: 0.550 for the accounting opacity, 0.526 for the insider opacity, and 0.649 for the informational opacity. Data source: Author's own calculation.
External financing need	Industry external financing need is defined as industry median value of capital expenditures (#128) minus cash flows from operations (#123 + #125 + #126 + #106 + #213 +#217) divided by capital expenditures. The median value is taken using all firms and all years during time period from 1990 through 2005. This variable is calculated at the 2-digit SIC industry level using the sample of all U.S. firms included in the COMPUSTAT database. It is then matched (by 2-digit SIC code) with non-U.S. industries from our sample. Data source: COMPUSTAT North America industrial tapes.
Predation	Predation is defined as the first principal component of (i) corruption in government (the degree to which corruption distorts economic and financial environment, reducing the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability); (ii) risk of government expropriation (risk of expropriation by governments based on a business environment ranking that quantifies the attractiveness of the business environment); (iii)

	property rights protection; (iv) rule of law (assessment of the law and order tradition); (v) government stance towards business (assessment of the likelihood that the current government will implement liberal and business-friendly policies); (vi) freedom to compete (assessment of government policies towards establishing a free competitive environment); (vii) quality of bureaucracy (assessment whether bureaucracy impedes fair business practices); and (viii) impact of crime (measurement whether violent crime is a problem for government and business). The loadings for the principal component are: 0.344 for the corruption index; 0.353 for the risk of government expropriation; 0.372 for property rights protection index; 0.366 for the rule of law index; 0.353 for the government stance towards business index; 0.349 for the freedom to compete index; 0.370 for the quality of bureaucracy index; and 0.319 for the impact of crime index. Larger numbers indicate a greater degree of government predation. We multiply this index by -1 and add a constant equal to the maximum value of the index so that larger values of the index represent a greater degree of predation. Data source: author's own calculation, International Country Risk Guide and Economist Intelligence Unit.
Autocracy	The autocracy index is calculated as the "autocratic government" variable minus the "democratic government" variable. The "autocratic government" variable measures general closedness of political institutions. The "democratic government" index measures general openness of political institutions. The two variables access (i) competitiveness of political participation; (ii) regulation of participation; (iii) the openness and competitiveness of executive recruitment; and (iv) constraints on the chief executive. We add the constant of value 10 to the score to change the original -10-to-+10 range to the 0-to-20 range. Data source: POLITY IV.
Party orientation of the government chief executive	This variable is the party orientation (left, right, or center) of the chief executive. Data source: the World Bank's database on political institutions compiled by Beck et al. (2001). The data are cross-checked using the following sources: *Journal of Democracy*, *Elections around the World* (http://www.electionworld.org/), *Election Guide* (http://www.electionguide.org/), and *CIA Factbook*.
Election dummy variable conditional on party change from right to left	This variable takes a value of one if the party orientation has changed from right to left during the election year. The election year is defined as the year of election of chief executive, which is the year of parliamentary election for a parliamentary system or assembly elected presidential system and the year of election of a president for a presidential system. Data source: the World Bank's database on political institutions compiled by Beck et al. (2001). The data are cross-checked using the following sources: *Journal of Democracy*, *Elections around the World* (http://www.electionworld.org/), *Election Guide* (http://www.electionguide.org/), and *CIA Factbook*.
Capital allocation sample	
Capital allocation efficiency	Capital allocation efficiency is defined as the elasticity (Ω) of investment (I) with respect to value-added (V). To estimate the elasticity we run, the following regression, $\ln\left(I^c_{i,t} / I^c_{i,t-1}\right) = \alpha^c_i + \Omega^c_i \ln\left(V^c_{i,t} / V^c_{i,t-1}\right) + \varphi^c_i$. It is run for every country-industry pair using all available data from 1964 through 1994. Investment (I) is measured as gross fixed capital formation. Both investment and value-added (V) are deflated by the Producer Price Index. Data source: the *United Nation's General Industrial Statistics* (INDSTAT-3 CD-ROM).
Industry growth of in value-added	It is measured as the growth rate in real value-added over 1980-1990 time period. Data source: Rajan and Zingales (1998) and the *United Nation's General Industrial Statistics* (INDSTAT-3 CD-ROM).
Industry share of value-added	This variable is defined as industry's share of value-added in a country's total value-added. Data source: Rajan and Zingales (1998).
Intangibles intensity	Intangibles intensity is measured as the ratio of intangible assets (#33) to net property, plant, and equipment (#8). Data source: COMPUSTAT North America industrial tapes.
Predation for the capital allocation sample	Predation is defined as the first principal component of (i) corruption in government (the degree to which corruption distorts economic and financial environment, reducing the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability); (ii) rule of law (assessment of the law and order tradition); (iii) quality of bureaucracy (assessment whether bureaucracy impedes fair business practices); (iv) risk of repudiation of contracts by government (likelihood that a country will modify or repudiate a contract with a foreign business); (v) risk of expropriation of private investment (evaluation of the risk of outright confiscation and forced nationalization of property). The loadings for the principal component are: 0.439 for the corruption index; 0.440 for the rule of law index; 0.450 for the quality of bureaucracy; 0.452 for the risk of contracts repudiation; and 0.455 for the risk of expropriation. We multiply this index by -1 and add a constant equal to the maximum value of the index so that larger values of the index represent a greater degree of predation. Data source: the "Quality of Governance" sample from Knack (1999). Raw data is from the *International Country Risk Guide*.

Table III
Opacity sample: Descriptive statistics by industry, 1990-2005.

This table contains summary statistics of the opacity sample by industry (averages across industries and years, 1990-2005). SIC code is 2-digit Standard Industry Classification code. The variables are: oil price-dependency, accounting opacity, insider opacity, informational opacity, and aggregate opacity. Industries from the U.S. are dropped from the sample. "Number of countries" is the aggregate number of industry observations across all countries and years, 1990-2005. The variables are defined in Table II.

sic code	*industry name*	*oil price-dependency*	*accounting opacity*	*insider opacity*	*informational opacity*	*aggregate opacity*	*number of countries*
100	Agricultural Production Crops	-0.110	0.143	-0.016	-1.961	0.109	210
200	Agriculture	-0.428	0.285	-0.019	-1.702	0.166	240
700	Agricultural Services	-0.265	0.303	-0.005	-2.030	0.244	163
800	Forestry	-1.087	0.381	-0.002	-1.830	0.169	230
900	Fishing, hunting, and trapping	-0.103	0.144	-0.012	-1.818	0.019	65
1000	Metal Mining	-0.151	0.446	-0.011	-1.642	0.278	367
1200	Coal Mining	0.057	0.366	-0.012	-1.683	0.272	150
1300	Oil And Gas Extraction	0.049	0.271	-0.002	-1.481	0.018	329
1400	Mining Of Nonmetallic Minerals	0.078	0.141	0.018	-1.875	0.165	235
1500	Building Construction	-0.024	0.200	-0.007	-1.584	-0.062	510
1600	Heavy Construction	-0.245	0.214	-0.011	-1.498	-0.116	427
1700	Construction Special	-0.237	0.204	-0.005	-1.839	0.144	308
2000	Food And Kindred Products	0.007	0.157	-0.011	-1.600	-0.091	702
2100	Tobacco Products	0.210	0.244	-0.010	-1.633	0.120	245
2200	Textile Mill Products	-0.207	0.181	-0.007	-1.738	0.020	491
2300	Apparel And Other Finished Products	-0.174	0.183	-0.011	-1.717	0.019	437
2400	Lumber And Wood	-0.414	0.262	-0.006	-1.782	0.056	372
2500	Furniture And Fixtures	-0.308	0.125	-0.003	-1.857	0.030	303
2600	Paper And Allied Products	-0.133	0.148	-0.008	-1.608	-0.118	579
2700	Printing, Publishing, And Allied Industries	-0.352	0.135	0.004	-1.750	0.000	458
2800	Chemicals And Allied Products	-0.354	0.298	-0.005	-1.454	0.039	636
2900	Petroleum Refining	-0.516	0.202	-0.014	-1.114	-0.361	381
3000	Rubber And Miscellaneous Plastics Products	-0.100	0.159	-0.015	-1.546	-0.159	494
3100	Leather And Leather Products	-0.099	0.132	-0.021	-1.514	-0.232	199
3200	Stone, Clay, Glass, And Concrete	-0.058	0.120	-0.010	-1.341	-0.326	618
3300	Primary Metal Industries	-0.071	0.175	-0.008	-1.397	-0.209	630
3400	Fabricated Metal Products	-0.033	0.202	-0.002	-1.737	0.057	470
3500	Machinery	-0.101	0.177	-0.014	-1.617	-0.070	548
3600	Electronic Equipment	-0.121	0.221	-0.016	-1.492	-0.108	549
3700	Transportation Equipment	-0.071	0.195	-0.005	-1.575	-0.030	536
3800	Measuring Instruments	-0.301	0.167	-0.005	-1.601	-0.055	350
3900	Miscellaneous Manufacturing Industries	-0.332	0.250	0.004	-1.698	0.183	353
4000	Railroad Transportation	0.060	0.126	-0.025	-1.807	0.075	118
4100	Local And Suburban Transit	0.117	0.267	-0.004	-1.925	0.233	218
4200	Motor Freight Transportation	-0.021	0.195	-0.007	-1.654	-0.034	302
4400	Water Transportation	-0.034	0.108	-0.004	-1.585	-0.174	488
4500	Transportation By Air	-0.285	0.182	-0.027	-1.360	-0.288	421
4600	Pipelines, Except Natural Gas	-0.137	1.207	-0.007	-1.934	1.610	29
4700	Transportation Services	-0.508	0.173	-0.007	-1.653	-0.027	414
4800	Communications	0.090	0.273	-0.012	-1.191	-0.224	597
4900	Electric, Gas, And Sanitary Services	-0.009	0.163	-0.010	-1.433	-0.199	583
5000	Wholesale Trade-durable Goods	-0.157	0.270	0.001	-1.633	0.096	568
5100	Wholesale Trade-non-durable Goods	-0.057	0.237	-0.013	-1.549	-0.013	618
5200	Building Materials, Hardware, Garden Supply	0.036	0.153	-0.011	-1.758	-0.076	134
5300	General Merchandise Stores	-0.469	0.325	-0.024	-1.406	-0.117	368
5400	Food Stores	-0.409	0.233	-0.012	-1.471	-0.098	451
5500	Automotive Dealers And Gasoline Stations	-0.054	0.265	0.004	-1.912	0.280	257
5600	Apparel And Accessory Stores	-0.074	0.213	0.023	-1.871	0.217	324
5700	Home Furniture, Furnishings, And Equipment	0.034	0.284	-0.016	-1.768	0.160	302
5800	Eating And Drinking Places	-0.383	0.175	-0.001	-1.613	-0.050	302

5900	Miscellaneous Retail	-0.411	0.315	0.000	-1.704	0.226	386
6000	Depository Institutions	-0.157	0.232	-0.019	-1.133	-0.474	725
6100	Non-depository Credit Institutions	-0.143	0.291	0.002	-1.526	0.258	316
6200	Security And Commodity Brokers	0.569	0.341	-0.004	-1.371	0.081	499
6300	Insurance Carriers	-0.199	0.165	-0.014	-1.162	-0.319	519
6400	Insurance Agents, Brokers, And Service	-0.165	0.121	-0.003	-1.937	0.097	170
6500	Real Estate	-0.268	0.355	-0.003	-1.644	0.147	548
6700	Holding And Other Investment Offices	0.205	0.621	-0.013	-1.458	0.397	546
7000	Hotels, Rooming Houses	0.152	0.137	-0.007	-1.552	-0.160	490
7200	Personal Services	-0.152	0.149	-0.012	-2.185	0.255	113
7300	Business Services	-0.174	0.355	-0.002	-1.541	0.166	553
7500	Automotive Repair, Services, And Parking	-0.107	0.113	-0.021	-1.767	-0.287	172
7600	Miscellaneous Repair Services	0.202	0.090	-0.024	-2.048	-0.132	57
7800	Motion Pictures	-0.161	0.156	-0.002	-1.847	0.129	208
7900	Amusement And Recreation	-0.220	0.184	-0.002	-2.013	0.233	356
8000	Health Services	0.262	0.235	-0.005	-1.936	0.225	299
8100	Legal Services	-0.109	-	0.038	-2.826	-	9
8200	Educational Services	-0.443	0.249	0.000	-1.911	0.225	192
8300	Social Services	0.425	0.221	-0.018	-2.442	0.609	72
8400	Museums, Art Galleries	-0.201	0.110	-0.111	-2.516	-1.013	25
8700	Engineering And Related Services	-0.436	0.219	-0.011	-1.616	-0.003	442
9900	Nonclassifiable Establishments	-0.212	0.249	0.022	-2.123	0.485	78
Average:		-0.139	0.234	-0.008	-1.701	0.038	359
Total:							25,854

Table IV
Opacity sample: Descriptive statistics by country, 1990-2005.

This table contains summary statistics of the opacity sample by country (averages across industries and years, 1990-2005). The variables are: accounting opacity, insider opacity, informational opacity, aggregate opacity, predation, autocracy, GDP per capita, oil reserves, and oil production. GDP per capita comes from the Economist Intelligence Unit. Oil reserves are expressed in tens of millions of barrels. Oil production is expressed in thousands of barrels (daily), average 1990-2005. Oil reserves and oil production statistics are from the 2007 BP Statistical Review. U.S. is dropped from the sample. "Number of industries" is the aggregate number of country observations across all industries and years, 1990-2005. The variables are defined in Table II.

Country	*accounting opacity*	*insider opacity*	*informational opacity*	*aggregate opacity*	*predation*	*autocracy*	*GDP per capita*	*oil reserves*	*oil production*	*number of industries*
Argentina	0.108	-0.038	-0.962	-0.671	4.570	2.616	$11,268	244	744	330
Australia	0.442	0.009	-2.171	0.751	0.894	0.000	$24,471	405	637	943
Austria	0.121	-0.024	-1.866	-0.012	1.587	0.000	$26,332	0	0	372
Belgium	0.092	0.006	-1.916	0.088	2.488	0.000	$25,357	0	0	490
Brazil	1.544	0.009	-1.678	2.110	6.415	2.000	$6,927	753	1,047	632
Canada	0.158	0.000	-2.299	0.409	1.020	0.000	$25,968	1,387	2,538	979
Chile	0.080	-0.019	-1.602	-0.242	2.068	1.720	$8,220	0	0	460
China	0.162	-0.032	-0.154	-1.115	7.188	17.000	$3,831	1,654	3,154	668
Columbia	0.052	-0.009	-1.262	-0.407	6.166	2.521	$6,281	228	584	141
Czech Rep.	0.134	-0.002	-1.994	0.191	3.821	0.000	$13,658	0	0	122
Denmark	0.119	0.005	-2.088	0.236	1.159	0.000	$25,857	97	259	525
Egypt	0.085	-0.029	-1.077	-0.585	5.690	15.186	$3,493	365	837	91
Finland	0.080	0.017	-1.945	0.212	1.113	0.000	$23,859	0	0	470
France	0.152	-0.005	-2.111	0.266	2.235	1.000	$24,528	0	0	968
Germany	0.157	-0.014	-2.059	0.250	1.864	0.000	$23,944	0	0	863
Greece	0.173	-0.031	-1.083	-0.488	4.026	0.000	$16,296	0	0	651
Hong Kong	0.378	-0.011	-1.500	0.134	1.001	-	$23,850	0	0	850
Hungary	0.085	-0.024	-1.678	-0.151	3.310	0.000	$12,076	0	0	171
India	0.113	-0.027	-1.292	-0.373	6.264	1.321	$2,234	562	757	634
Indonesia	0.198	0.008	-1.403	-0.153	7.715	10.854	$2,748	500	1,451	639
Ireland	0.094	-0.038	-1.947	0.076	1.978	1.807	$25,375	0	0	283
Israel	0.105	-0.008	-0.959	-0.655	3.336	0.447	$18,806	0	0	413
Italy	0.099	0.003	-1.485	-0.133	4.480	0.000	$23,802	73	98	593
Japan	0.069	-0.013	-1.458	-0.314	1.754	0.000	$24,286	0	0	1,030
Korea	0.124	-0.015	-1.365	-0.318	2.900	3.057	$15,005	0	0	831
Luxembourg	0.070	-0.005	-2.101	-0.026	1.007	0	$46,042	0	0	115
Malaysia	0.152	-0.014	-0.777	-0.657	4.072	6.661	$7,785	0	0	899
Mexico	0.974	-0.006	-1.484	0.966	6.538	4.736	$8,111	460	747	367
Morocco	0.092	-0.062	-1.154	-0.733	7.012	16.316	$3,791	3,562	3,379	98
Netherlands	0.150	-0.002	-1.946	0.149	1.240	0	$25,648	0	0	556
New Zealand	0.990	0.007	-2.298	1.58	0.599	0	$19,669	0	0	564
Norway	0.140	0.016	-1.772	0.087	1.299	0	$31,475	0	0	434
Pakistan	0.109	-0.019	-1.355	-0.39	7.433	8.164	$1,821	1,035	2,886	305
Peru	0.069	0.004	-2.144	0.142	6.163	6.946	$4,588	0	0	182
Philippines	0.299	0.029	-1.562	0.214	6.205	2	$3,678	89	112	438
Poland	0.138	-0.013	-1.492	-0.182	4.048	0.783	$10,115	0	0	311
Portugal	0.099	-0.011	-1.882	0.033	2.631	0	$16,129	0	0	359
Russia	0.069	0.028	-1.011	-0.66	8.302	4.382	$8,110	0	0	125
Singapore	0.184	0.007	-1.294	-0.206	0.783	12	$24,432	6,570	7,563	780
South Africa	0.322	-0.002	-1.963	0.423	5.804	1.549	$9,540	0	0	740
Spain	0.083	-0.032	-1.767	-0.162	2.923	0	$19,558	0	0	551
Sri Lanka	0.102	0.008	-0.905	-0.546	5.890	4.756	$2,554	0	0	204
Sweden	0.172	0.005	-1.718	0.052	0.748	0	$25,153	0	0	615
Switzerland	0.087	0.009	-1.961	0.127	1.057	0	$29,194	0	0	544
Taiwan	0.091	-0.037	-0.811	-0.758	2.534	2.572	$20,284	0	0	699
Thailand	0.187	0.005	-1.275	-0.17	4.069	1.938	$6,052	38	137	786
Turkey	0.131	-0.019	-1.523	-0.231	5.449	2.425	$5,853	0	0	548
U.K.	0.115	-0.031	-1.935	-0.019	0.391	0	$23,484	453	2,388	1031
Venezuela	0.088	-0.005	-1.12	-0.585	7.316	2.547	$5,696	7,192	2,906	134
Zimbabwe	-	-0.022	-1.647	-	7.12	16.103	$1,974	0	0	145
Average		-0.009	-1.565	-0.050	3.714	3.131	$15,584	513	645	513.580
Total										25,679

Table V
Opacity sample: Correlation coefficients between main variables.

This table reports the correlation coefficients between the main variables of the opacity sample. The numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in boldface. The coefficients between industry oil price-dependency and country predation, autocracy, GDP per capita, and oil reserves are not reported because industry oil price-dependency is country-invariant. GDP per capita is from the Economist Intelligence Unit. Oil reserves are expressed in tens of millions of barrels. Oil reserves statistics are from 2007 BP Statistical Review. Industries from the U.S. are dropped from the sample. The variables are defined in Table II.

	oil price-dependency	*accounting opacity*	*insider opacity*	*informational opacity*	*Aggregate opacity*	*predation*	*autocracy*	*GDP per capita*
industry accounting opacity	-0.0032							
	(0.63)							
industry insider opacity	-0.0006	**0.0239**						
	(0.93)	(0.00)						
industry informational opacity	**0.0147**	**0.0587**	**0.0516**					
	(0.02)	(0.00)	(0.00)					
industry aggregate opacity	0.0057	**0.5747**	**0.6785**	**0.5497**				
	(0.41)	(0.00)	(0.00)	(0.00)				
country predation	-	**0.1247**	-0.0081	**0.2438**	**0.0872**			
		(0.00)	(0.21)	(0.00)	(0.00)			
country autocracy	-	-0.0059	**-0.0329**	**0.3056**	-0.0052	**0.4640**		
		(0.40)	(0.00)	(0.00)	(0.40)	(0.00)		
country GDP per capita	-	**-0.1213**	**0.0144**	**-0.2918**	**-0.0923**	**-0.7737**	**-0.4712**	
		(0.00)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	
country oil reserves	-	**0.1230**	0.0098	**0.0774**	**0.1773**	**0.3115**	**0.1955**	**-0.1765**
		(0.00)	(0.13)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Table X
Capital allocation sample: Descriptive statistics by country.

This table contains summary statistics by country. The variables are: income per capita, allocation efficiency, industry growth, financial development, predation, and autocracy. Income per capita is for 1980 and it comes from Rajan and Zingales(1998). For Nigeria, it is calculated using the IMF's International Financial Statistics database. U.S. is dropped from the sample. "Number of industries" is the number of industry observations across countries. The variables are defined in Table II.

country	*income per capita*	*allocation efficiency*	*industry growth*	*financial development*	*predation*	*autocracy*	*number of industries*
Australia	$9,866	0.617	2.811%	0.820	0.658	0.000	40
Austria	$9,554	0.546	4.733%	0.996	0.412	0.000	39
Bangladesh	$121	0.142	5.432%	0.199	6.797	15.545	28
Belgium	$11,226	0.535	0.310%	0.654	0.211	0.000	19
Brazil	$1,650	0.494	4.465%	0.325	3.108	7.455	24
Canada	$10,486	0.614	2.902%	0.977	0.132	0.000	40
Chile	$2,531	0.959	6.249%	0.743	3.330	13.273	40
Colombia	$1,150	0.261	3.927%	0.214	3.981	2.000	40
Costa Rica	$2,155	-	5.942%	0.531	3.531	0.000	34
Denmark	$12,188	0.715	2.132%	0.559	0.135	0.000	32
Egypt	$563	0.297	9.672%	0.741	5.071	14.909	40
Finland	$10,181	0.685	3.023%	0.523	0.138	0.000	40
France	$11,337	0.753	2.691%	0.696	0.462	1.545	33
Germany	$12,345	1.274	3.825%	1.084	0.284	0.000	35
Greece	$3,814	0.251	2.594%	0.740	3.554	1.091	40
India	$240	-0.114	7.519%	0.496	3.778	2.000	40
Israel	$3,573	0.834	2.556%	1.181	2.820	1.000	33
Italy	$6,460	0.437	1.632%	0.975	1.492	0.000	24
Japan	$9,912	0.773	6.789%	1.305	0.431	0.000	38
Jordan	$1,109	0.344	8.592%	1.164	5.075	18.455	18
Kenya	$417	0.180	2.722%	0.279	4.006	16.818	22
Korea	$1,407	0.741	13.761%	0.626	3.213	11.818	38
Malaysia	$1,683	0.756	9.480%	1.187	2.488	6.000	39
Mexico	$2,651	0.612	-2.214%	0.387	4.060	12.182	38
Morocco	$807	0.342	8.906%	0.409	5.007	18.000	13
Netherlands	$11,155	0.611	-0.769%	0.910	0.000	0.000	14
New Zealand	$7,490	0.975	2.607%	0.591	0.125	0.000	20
Nigeria	$1,008	-0.104	-7.467%	-	5.969	11.545	28
Norway	$13,430	0.529	0.287%	0.629	0.138	0.000	35
Pakistan	$290	-0.401	8.187%	0.528	5.370	12.091	35
Peru	$842	0.451	-3.334%	0.283	5.698	2.909	40
Philippines	$729	0.304	-0.756%	0.460	6.283	10.909	33
Portugal	$2,301	0.319	2.049%	0.820	1.955	0.182	36
Singapore	$4,661	0.615	8.769%	1.962	0.997	12.000	29
South Africa	$2,899	0.471	2.188%	1.512	2.183	5.909	30
Spain	$5,087	1.188	2.387%	1.025	1.772	0.182	40
Sri Lanka	$252	0.784	-1.834%	0.440	4.806	4.727	27
Sweden	$14,368	1.434	1.697%	0.791	0.128	0.000	39
Turkey	$1,081	0.441	12.800%	0.354	4.151	5.909	40
U.K.	$9,600	0.461	2.045%	0.778	0.249	0.000	40
Venezuela	$3,975	0.529	-1.672%	0.343	3.984	1.000	37
Zimbabwe	$441	0.100	2.156%	1.012	4.675	10.455	22
Average	$4,929	0.531	3.566%	0.738	4.675	5.236	33
Total							1,372