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Politics and Volatility*

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Abstract

We investigate how politics (party orientation, national elections, and strength of democratic institutions) affect stock market volatility. We hypothesize that labor-intensive industries, industries with larger exposure to foreign trade, industries whose operations require efficient contracts, and industries susceptible to government expropriation are more sensitive to changes in political environment. Using a large panel of industry-country-year observations, we show that politically-sensitive industries exhibit higher volatilities during national elections. Volatility is also higher for labor-intensive industries under leftist governments. Moreover, governance-sensitive industries and industries under a higher risk of expropriation are more volatile when democratic institutions are weak. The rise in volatility is driven largely by systematic risk rather than firm-specific risk. The results are consistent with the 'peso problem' hypothesis that uncertainty about future government policies can increase stock market volatility.

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Introduction

Do politics affect the economy? According to the proponents of the ‘partisan theory’ (Hibbs, 1977), political structure influences economic outcomes because different parties enact governmental policies which cater to a specific electoral segment. On the other hand, according to the ‘rational partisan theory’ (Alesina, 1987), party orientation (left or right) should not have a material impact on economic outcomes because rational economic agents adjust their expectations depending on which party wins national elections.

There is evidence that ruling party orientation affects inflation and employment (Alesina and Rodrik, 1994, Blomberg and Hess, 2001, Olters, 2001, Foerster and Schmitz, 1997, Fowler, 2006, Snowberg, et al., 2007) and the performance of stock markets (Santa-Clara and Valkanov, 2003, Füss and Bechtel, 2006). Moreover, volatility of stock prices increases during national elections in the OECD countries (Bialkowski, et al., 2006).

In this paper, we examine the impact of politics on stock markets volatility. We ask the following general question: Does the political environment affect stock market volatility? By political environment we mean the ruling party’s orientation, the strength of a country’s democratic institutions, and whether national elections take place.

Unlike existing studies that examine the relation between politics and stock market volatility for a single country (see, e.g., Füss and Bechtel, 2006) or a small group of developed counties (Bialkowski et al., 2006), our paper provides evidence based on a sample of 72 industries from 51 countries over 16 years. In order to understand how political environment affects volatility we use the approach introduced by Rajan and Zingales (1998) which is based on industry data from multiple countries. The Rajan and Zingales methodology can be outlined as follows. The Rajan and Zingales methodology can be outlined as follows: a framework applied to check whether a particular channel (in our case, the political channel) affects a certain economic outcome uses a test to determine if industries that are more sensitive to a channel exhibit different economic patterns (volatility in our case) in countries where that channel is likely to be at work. In other words, we test to see whether industries that are more sensitive to a particular political structure exhibit higher volatilities when that political structure (e.g. left government) is in place, effectively making predictions about within-country, across-industries differences in industry volatility based on interactions between country political structure and industry characteristics. Our regressions include industry, country, and year fixed effects. The fixed effects methodology reduces the problems of omitted variables bias and model misspecification that typically afflict cross-country regressions.

For our empirical analysis, we need to classify industries according to their sensitivity to politics, and we employ four sensitivities. First, more labor-intensive industries are likely to be more responsive to policies implemented by left governments. According to Botero et al. (2004) and Volpin and Pagano (2005), political power of the leftist governments is associated with stronger labor protection and weaker investor protection. Thus we expect more a pronounced effect of left governments on volatility of more labor-intensive industries.

The second measure, foreign trade sensitivity, assesses industrial exposure to foreign trade. Politicians often exploit regulatory powers to impose costs of entry on international businesses to benefit incumbents. Rajan and Zingales (2003) describe how centralized governments constrain foreign trade to maintain the monopoly power of domestic market-oriented firms. We hypothesize that more internationally-integrated industries are more sensitive to the political environment in countries with weaker democratic institutions.

The third measure, governance sensitivity, aims to capture the need for effective governance in a particular industry. The measure is based on the concentration of input purchases from other industries. If an industry's output requires inputs from only few other industries, it is less dependent on explicit contract enforcement by the regulatory authorities. On the other hand, if an industry uses a lot of inputs coming from different industries and is dependent on contracts, poor contracts enforcement may disrupt its transactions. Therefore, more autocratic governments or governments that tend to establish weak property rights are expected to be more detrimental to more governance-sensitive industries.

The last sensitivity measure captures the risk of expropriation. We proxy for this risk by disentangling industry profitability into two parts: a part driven by luck (by a variable beyond managerial control, such as the level of oil prices) and a part determined by managerial skill and effort (not driven by oil prices). 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. We expect that expropriation-prone industries are more volatile when governments do not respect property rights.

The four sensitivities (labor, foreign trade, governance, and expropriation risk) are interacted with country-level political variables. These variables are: elections, chief executive's party orientation (left, tight, or center), level of democracy, and the degree of protection of property rights.

We provide robust evidence that politics affect volatility. Specifically, more labor-intensive industries, foreign trade-sensitive, governance-sensitive, and expropriation-vulnerable industries experience higher stock price volatility during the times of national elections. As expected, government party orientation has a strong influence on labor-intensive industries; their volatility is significantly larger when left governments are in power.[1] Governance-sensitive industries or expropriation-prone industries are more volatile when governments are autocratic or operate in countries with weak property rights. Our results are economically significant. For example, the hotels industry (a labor-intensive industry) is 6% more volatile than the foods industry (a low labor-intensity industry) in countries with left governments in comparison to the same industries in countries with right governments. Similarly, in a country with insecure property rights, such as Venezuela, the oil and gas extraction industry (high-expropriation risk industry) is 8.8% more volatile than the agriculture industry (a low-expropriation risk industry) compared to similar industries in Norway, a country with developed property rights.

How can political structure and political events affect volatility? We argue that it can be driven by the 'peso problem.' The peso problem shows that volatility is influenced by markets' anticipation of a rare, potentially catastrophic event that may or may not materialize. Political events fit well with this potential explanation since investors generate different possible scenarios with varying probabilities. First, election outcomes are uncertain and may or may not result in a dramatic change in the political environment. Second, the strength of democratic institutions is closely related to the probability of a potentially catastrophic event for the firm, such as expropriation or nationalization. Finally, government orientation is related to the possibilities of interventions. Thus, political events, though not in themselves disastrous, may affect the probabilities of potentially harmful events.

[1] One might expect the opposite to be the case, with lower uncertainty for labor-intensive firms under left governments. However, the likelihood of labor-related policy change is higher when left governments are in power. Anticipation of such a change, whether positive or negative, should result in higher volatility.

This view has been recently advanced in a number of papers which are related to our work. A study by the economic historian Voth (2002) demonstrates that the unusually high volatility during the Great Depression in a number of advanced economies can be explained by the perceived threat of a communist takeover (proxied by the number of disruptive events, such as assassinations, general strikes, riots, anti-government demonstrations, etc.). Bittlingmayer (1998) makes a claim that the increase in volatility in Weimar Germany caused a subsequent decrease in output. He attributes the increase in volatility to uncertainty about political events triggered by the fear of socialists taking power. We, on the other hand, show that even the expectations of less dramatic events, such as pro-labor legislation or expropriations of individual businesses, can explain differential levels of volatility across countries and industries.

Next, we turn our attention to different components of volatility – idiosyncratic (firm-specific) and systematic volatility. The components of the total variation of stock returns have received a lot of attention in recent research. Campbell et al. (2001) document the increasing time trend in idiosyncratic volatility observed in the US stock market over the last four decades (1962 - 1996). Morck, Yeung, and Yu (2000) find evidence that the R^2 of the market model – the ratio of firm-specific returns variation to total variation – is higher in countries with underdeveloped institutions.

We repeat the analysis by using the market model R^2 measure. We find R^2 is not different for politically-sensitive industries during national elections and does not depend on party orientation. This is because the increase in total volatility in response to political events is evenly spread out between the firm-specific and systematic components of the volatility. However politically-sensitive industries have higher R^2s in more autocratic countries or countries with weaker property rights; the increase in total volatility for politically-sensitive industries is driven by an increase in systematic return variation and/or a simultaneous decrease in firm-specific variation.

The rest of the paper is organized as follows: Section 1 develops the hypothesis. Section 2 describes the sample and variables. Section 3 reports the results on volatility. Section 4 presents volatility decomposition results. Section 5 concludes.

1. Hypothesis

According to a standard stock price model, stock price is equal to the expected discounted present value of its dividends. Assuming a constant discount rate, the price is:

$$P_{t|\Omega} = \sum_{j=1}^{\infty}\left[\frac{E\left(d_{t+j} \mid \Omega_t\right)}{(1+r)^j}\right] \tag{1}$$

In (1), *P* is the price of a stock in period *t* conditional on information set Ω, *d* are dividends, and *r* is a constant discount rate. Volatility of stock price can then be defined as the average size of innovations in the present discounted value of dividends (West, 1988):

$$VAR = E\left[P_{t|\Omega} - E\left(P_{t|\Omega} \mid \Omega_{t-1}\right)\right]^2 \tag{2}$$

Volatility also gave rise to one of the most widely recognized asset pricing anomalies – the excess volatility puzzle. Evidence that the volatility of stock prices is too high to be justified by the subsequent volatility of fundamentals was first documented in early 1980s (Shiller, 1981, LeRoy and Porter, 1981, among others). In this paper, we do not aim to resolving the volatility puzzle *per se, but rather* we seek to make an intuitive argument that more politically-sensitive industries experience higher levels of volatility when a particular political structure is in place or these industries face substantial political risk.[2]

The following simple example illustrates this point. Consider two firms, one operating in a politically-sensitive industry and another operating in an industry not subject to political risks. The two firms are identical in terms of future cash flows. However, in period *t*, a politically-sensitive company is forced into bankruptcy due to a political event that happens with probability $\theta_{i,t}$.[3] The second firm operates indefinitely. Given the probability of a bankruptcy, the formula for the stock price of a politically-sensitive firm becomes,

[2] As Shiller (1981, p. 434) notes, "Another way to save the general notion of efficient markets is to say that our measure of uncertainty regarding future dividends…understates the true uncertainty about future dividends. Perhaps the market was rightfully fearful of much larger movements than actually materialized."

[3] For instance, in natural resource industries, especially during periods of high commodity prices, corporate profits and rents are relatively easy to capture, placing firms in these industries under a greater risk of expropriation by the government or other potential predators, such as rival companies (Kolotilin, 2007).

$$P_{t|\Omega} = \sum_{j=1}^{\infty}\left[\frac{E\left(\prod_{k=1}^{j}(1-\theta_{i,t+k})d_{t+j} \mid \Omega_t\right)}{(1+r)^j}\right]. \qquad (3)$$

In (3), $\prod_{k=1}^{j}(1-\theta_{i,t+k})$ is the probability that a company survives up to period $t + k$. From (3), the volatility of a politically-sensitive firm comes from two sources: (i) variation of innovations in the present discounted value of dividends, and (ii) variation of innovations in liquidation probabilities. Paribus ceteris, the variation in the share price of a politically-sensitive firm is expected to be larger than the variation of the share price of a politically-insensitive firm, as an additional source of potential variance is introduced. Equation (3) shows that stock price volatility might be higher during election years, as it is reasonable to expect larger variation in liquidation probabilities during those periods.

As for higher volatilities of politics-sensitive industries during leftist, autocratic, or predatory governments, we rely on the argument in Veronesi (2004)[4]. The author argues that in an environment of higher uncertainty, investors are more responsive to news, which may contribute to excess volatility. In a theoretical model where there is a small *ex ante* chance that the drift rate of dividends shifts to a low state (zero, in our case), the author shows that negative shocks to fundamentals result in higher return volatility.

Therefore the hypothesis we test in this paper is formulated as follows: *More politically-sensitive industries have larger volatility levels during the periods of changing expectations of political events.*

2. Empirical Specification and Variables

A. Empirical Specification

Our regressions are similar to those in Rajan and Zingales (1998) and include interaction effects of industrial sensitivities with country variables, as well as fixed effects to account for unobserved industry-, country-, and year-specific characteristics. The main advantage of this methodology is that by controlling for all

[4] Veronesi (2004) investigates the implications of the “peso problem” hypothesis on a number of asset pricing anomalies, such as high risk premia, asymmetric volatility reaction to good and bad news, excess sensitivity of price reactions to dividend changes and excess volatility.

the fixed effects, the problem of omitted variables bias or model specification, which can afflict cross-country regressions, is mitigated.

We estimate the following regressions,

$$LVOL^{c}_{ind,t} = \alpha_{ind} + \delta_{c} + \eta_{t} + \beta_{1} SENSITIVITY_{ind,t} \times POLITICAL^{c}_{t} + \gamma^{'} POLITICAL^{c}_{t} + \varepsilon^{c}_{ind,t} . \qquad (4)$$

were *ind* indexes industries, *c* indexes country, and *t* indexes time. All regression specifications include industry fixed effects (α_{ind}), country fixed effects (δ_c), and year fixed effects (η_t). Industries are defined at the 2-digit SIC code. The dependent variable, $LVOL^{c}_{ind,t}$, is the log of industry volatility defined below. The independent variables include interaction terms of sensitivities measures (*SENSITIVITY*) with political variables (*POLITICAL*). After controlling for fixed effects, the main coefficient of interest (β_1) measures the incremental increase in volatility given a unit increase in sensitivity conditional on country political structure.

Our sample consists of all firms covered by the Worldscope and Datastream. These databases cover major publicly-listed companies from 51 countries. The sample starts in 1990 and ends in 2005. The sample covers over 27,779 firms from 51 countries.

B. Volatility Measure

The dependent variable in (4) is industry volatility. First, we calculate volatility for every *firm* in country *c* in year *t* as the variance of weekly return,

$$VOL^{c}_{firm,t} = \frac{1}{W^{c}_{firm,t}} \sum_{w=1}^{W^{c}_{firmi,t}} (r^{c}_{firm,w,t} - \overline{r^{c}_{firm,t}})^{2} \ , \qquad (5)$$

where $r^{c}_{firm,w}$ is weekly return, $W^{c}_{firm,t}$ is the number of weekly observations in year t = 1996-2005, and $\overline{r^{c}_{firm,t}}$ is the average return during year *t*.[5] The returns are expressed in local currencies. We drop firm with fewer than 30 trading weeks. Firm volatilities are then aggregated to 2-digit SIC industries by averaging across all firms and countries,

[5] Weekly rather than daily returns are used because Datastream reports a zero return when a stock is not traded on particular days. Therefore, weekly returns are less subject to a potential noise due to infrequent trading. For a future robustness check we plan to use daily returns because daily returns are less autocorrelated providing more precise estimates of volatility.

$$VOL_{ind,t}^{c} = \frac{\sum_{firm=1}^{I_t^c} VOL_{firm,t}^{c}}{I_t^c} \quad , \qquad (6)$$

where I_t^c is the number of firms in an industry.[6] We drop industries with fewer than 5 firm observations. Finally, *VOL* is expressed in logs (we call it *LVOL* to differentiate from simple volatility) to improve the normality of the variable.[7]

C. Industry Sensitivities to Political Environment

The sensitivity measures are computed using a sample of U.S. publicly listed firms from COMPUSTAT tapes. Subsequently, the U.S. is dropped from the sample. Rajan and Zingales (1998) argue that as the US markets are virtually frictionless, 'true' sensitivity of an industry to a respective factor is observed in those markets. Therefore these variables can be viewed as "desired" (under optimal market conditions) levels. Each industry in every country is then assigned the corresponding value based on U.S. data.

C.1 Labor sensitivity

Labor intensity of an industry is used to measure *labor sensitivity*. We hypothesize that the industries that use rely heavily on labor force are more sensitive to political environment, e.g., party orientation.

Labor intensity is computed by dividing the value of labor inputs over the total value of inputs. Data on inputs is obtained from the input-output database developed by Dale W. Jorgenson and described in Jorgenson (1990) and Jorgenson and Stiroh (2000). The dataset contains values of labor, capital, energy and material inputs. The authors assembled a detailed dataset on labor price, quantity, quality and value, as well as some additional indicators using industry data from the Bureau of Economic Analysis and Bureau of Labor Statistics. The data set covers 35 sectors at the 2-digit

[6] We plan to recalculate the returns variation using industry value-weighted index.

[7] The original volatility is highly positively skewed (skewedness = 4.13). The log of volatility, however, has skewedness close to zero (-0.05). The skewedness-kurtosis combined test cannot reject the hypothesis that the log of volatility is normally distributed (Chi-squared statistics = 4.19 with *p-value* = 0.22). See D'Agostino, Balanger, and D'Agostino Jr. (1990) for details of this test.

SIC level from 1959 to 1996.[8] We use time-variant measures from 1990 through 1995; for years 1996-2005, we rely on time-invariant values for 1995.[9]

Figure 1 and column three of Table I present labor sensitivities grouped by 2-digit SIC. The average labor sensitivity is 0.307, the least labor intensive industry is petroleum refining (relying on highly automated heavy machinery) - 0.084, whereas among the most labor intensive industries are hotels (a service industry with highly customized attention requirements) - 0.445, building construction (relying on non-automated human-operated heavy machinery) - 0.43, and measuring instruments (requiring human precision) - 0.494.

C.2 Foreign trade sensitivity

Foreign trade sensitivity assesses the exposure of a particular industry to foreign trade. Economic policies related to openness (e.g., liberalization) should have greater impact on economically integrated industries compared to industries operating only in domestic markets. On the other hand, governments may favor closed markets to protect incumbent companies from outside competition.

Foreign trade sensitivity is defined as (value of exports + value of imports) / value of output. The trade data are obtained from the United States International Trade Commission and contain statistics on the value of exports and imports. Imports are represented by the customs value of imports for consumption, and exports are measured by the FAS (free alongside ship) value. Data are available for manufacturing industries only. Output is measured by the value of shipments available for 2002 at the 3-digit NAICS level at the Bureau of Census. Three-digit NAICS codes have been translated into 2-digit SICs.[10] Trade sensitivities appear on Figure 2 and in column four of Table I. The average trade sensitivity is 0.513. Automotive repair, being a highly localized service industry, exhibits the lowest share of trade in industry output (0.014), whereas highly mobile and versatile manufacturing industries, like apparel (0.91) and leather products (0.968), have the highest dependence on trade.

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[8] The dataset is available at http://post.economics.harvard.edu/faculty/jorgenson/data.html.

[9] A similar variable is used by Mueller and Phillippon (2007) in a study of labor relations and ownership structure.

[10] The relationship between NAICS and SICs is one-to-many, rather than one-to-one.

C.3. Governance sensitivity

Industries whose operations depend on contracts enforceability are more vulnerable to governments' policies. We measure the need for reliable contracts by g*overnance sensitivity*, defined as the concentration of purchases of a certain industry. If in its production, an industry uses input from only few other industries, it is less dependent on explicit governance by regulatory authorities. On the other hand, if an industry uses inputs coming from different industries and therefore is dependent on contracts' enforceability, poor governance may disrupt its transactions. The measure has been developed by Blanchard and Kremer (1997), and applied by Rajan and Subramanian (2007) and Levchenko (2007). Governance sensitivity is one minus the Herfindahl index of input industry shares,

$$C_i = 1 - \sum_j \phi_{i,j}^2 , \qquad (7)$$

where $\phi_{i,j}$ is the share of input of industry *j* in the production of industry *i*. Governance sensitivity is zero if the industry uses only one input from other industries, and it approaches one, as the number of inputs coming from other industries increases and their shares become smaller. The data used to compute governance sensitivities is compiled in the US IO (input-output) tables by the Bureau of Economic Analysis. The data are assembled at the 2-digit SIC level, and is collected for the year 2005.[11] Governance sensitivities are depicted in Figure 3 and reported in column five of Table I. The average governance sensitivity score is 0.847. The concentration in reliance on inputs from other industries is especially high for manufacturing industries like forestry and petroleum refining (they use very few inputs), resulting in the lowest governance sensitivity scores. On the other hand, most of the services industries exhibit the highest scores, reflecting their reliance on numerous inputs from diverse industries. Other scores appear less intuitive, for example metal mining has higher complexity than electronic and electrical equipment.[12]

[11] The earlier data are not usable because the input-output matrix is organized by Industrial Organization codes which do not correspond to SIC codes.

[12] Blanchard and Kremer (1997) compute the same variable using input-output matrix data as of 1991-1994 for several former Soviet republics. Our industry sensitivities are consistent with theirs: refineries (petroleum refining in our study) have the second lowest score, whereas glass and porcelain (stone, clay and glass in our study) has among the highest complexity scores. Levchenko (2007) uses the US

C.4. Expropriation risk sensitivity

If governments do not respect property rights that should have an effect on industries that are more prone to expropriation. We measure the *expropriation risk sensitivity* as industry sensitivity of profits with respect to oil prices as in Durnev and Guriev (2007).[13] The underlying premise is that the risk of government expropriation is higher for industries whose profits are driven more by luck, rather than managerial effort. 'Luck' is measured by industries' sensitivities to the level of oil prices – something beyond managerial control.[14] Following Bruno and Claessens (2007), oil price sensitivity is defined as the coefficient β^{ind} on the natural logarithm of oil price in a regression of industry inflation-adjusted valuation on time trend and log of real oil price,

$$Q_t^{ind} = \alpha^{ind} + t^{ind} + \beta^{ind} \ln\left(P_t^{oil}\right) + \mu_t^{ind} \ , \tag{8}$$

where Q is the median industry valuation (inflation-adjusted), α is a constant, t is the time trend, P^{oil} is inflation-adjusted price of oil, and μ is the error term. Regression (8) is estimated for every 2-digit SIC industry using a sample of U.S. publicly listed firms from 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. [15] Figure 5 plots industry oil price-dependency for 72 U.S. industries aggregated at the two-digit SIC level. According to Figure 4 and the sixth column of Table I, the majority of industries (56 out of 72) show negative oil price sensitivities. Industries that rely on

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IO tables, like we do, but computes the variable at the 4 digit SIC level, regardless he also finds that petroleum refining has one of the lowest complexity scores.

[13] Durnev and Guriev (2007) argue that predatory governments are more likely to expropriate corporate profits in natural-resource industries when prices of such resources are higher.

[14] Bertrand and Mullainathan (2003) use a similar argument to differentiate between managerial luck and skill in a study of CEOs compensation. 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.

[15] To check for robustness, 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. 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 an cycle condensate; and (4) producing gas and hydrocarbon liquids from coal at the mine site. The results remain qualitatively unchanged when we use this new variable.

oil and other natural resources as a major production input exhibit negative sensitivities (especially "Petroleum Refining" and "Transportation Services"). As expected, industries whose major outputs are natural resources have positive sensitivities ("Mining of Minerals", "Coal Mining", "Oil and Gas Extraction").

Using historical data on expropriations around the world (1955-2003) we confirm that oil price-dependent industries have experienced more instances of expropriation. Figure 5 utilizes Kolotilin's (2007) data (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.[16] 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 1955-2005.[17]

D. Political Structure Variables

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*, *Election Guide*, and *CIA Factbook*[18]. The *party orientation* (left, right, or center) dummy variable takes a value of one if the chief executive's party orientation is left and zero otherwise. Similarly, the *election year* dummy takes a value of one during the year of executive election. The executive election year is the year of parliamentary election for a parliamentary system or assembly elected presidential system, and the year of presidential election for a presidential system. Table II contains country-level information on the political system (presidential or parliamentary), chief executive's party type (left, right, or center), and government executive election dates. The sixteen years (1990 - 2005) in our sample allow us to

[16] We thank Sergei Guriev for providing us with these data.

[17] 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.

[18] The data is available at http://www.electionworld.org and http://www.electionguide.org and http://www.cia.gov respectively.

capture at least two and sometimes three entire government cycles of standard four-year length. Thirty-six countries have a parliamentary system and, on average, have had 4.14 executive elections over our sample period. Under the presidential system (12 countries), the terms of office are longer and the average number of elections is 3.16.

In order to measure political constraints on chief executives, we use democracy and autocracy indexes 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.[19] The "autocratic government" variable measures general closedness of political institutions, whereas the "democratic government" measures general openness. 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.[20]

Next, we discuss the construction of the *predation index* which aims at capturing country-level degree of predation. The 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); (vii) *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 indexes are obtained from *Transparency International*, while the rest of the indexes come from the *Economist Intelligence Unit*.

Individual indexes of institutional development are known to be highly correlated and using them in one regression could be subject to multicollinearity. To address this problem, we use the first principal component analysis (PCA) technique to combine the eight indexes described above into a unified index. The PCA is a statistical

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[19] We add a constant 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.

[20] The data are available at http://www.cidcm.umd.edu/polity.

method to reduce multidimensional data sets to lower dimensions.[21] The first principal component captures 64% of the corresponding cross-sectional variance of the eight variables above. Moreover, only the first eigenvalue is significantly larger than one; thus one factor is sufficient to capture much of the common variation among the eight variables. The loadings for the predation index (based on the PCA) are: 0.103 for the corruption index; 0.160 for the risk of government expropriation; 0.202 for lack of property rights protection index; 0.206 for the rule of law index; 0.116 for the government stance towards business index; 0.118 for the freedom to compete index; 0.200 for the quality of bureaucracy index; and 0.093 for the impact of crime index. All loadings are positive meaning that the eight proxies of institutional development are positively correlated.[22]

3. Empirical Results

A. Univariate Analysis

Statistics by country (GDP per capita, volatility, predation and autocracy) are reported in Table III. The last column lists the number of firm-years observations per country used in calculating the volatility.

Table IV reports correlation coefficients between the main variables: logs of volatility, political sensitivity measures (labor, foreign trade, governance, and expropriation), and country variables (GDP per capita, autocracy, and predation). More foreign trade-intensive, labor-intensive, as well as oil price-dependent industries have significantly larger levels of stock return volatility. More governance-intensive industries (as measured by complexity of inputs) are less volatile. Industries in more economically developed, less predatory, and less autocratic countries exhibit lower volatilities. This is evident from the positive and significant correlation between predation, autocracy, and volatility, while correlation between GDP per capita and volatility is negative and significant.

In Table V, we compare volatility measures depending on: the type of main government party orientation (Panel A), whether it is an election year or not (Panel

[21] In brief, PCA can be viewed as an orthogonal linear transformation that alters the data to a new coordinate system such that the greatest variance by any projection of the data comes to lie on the first coordinate (called the first principal component), the second greatest variance on the second coordinate, and so on. See Stevens (1986) for details.

[22] Thus, Predation Index = 0.103 × corruption + 0.160 × risk of government expropriation + 0.202 × property rights protection + 0.206 × rule of law index + 0.116 × government stance towards business + 0.118 × freedom to compete + 0.200 × quality of bureaucracy + 0.093 × impact of crime. In the above formula, each of eight indexes is normalized, that is, they have zero mean and variance equal to 1. 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 more predation.

B), high (75th percentile) versus low (25th percentile) Autocracy index (Panel C), and high (75th percentile) versus low (25th percentile) Predation index (Panel D). Stock market volatility is higher when a left party is in power. Although the difference is small (0.02%), it is significant according to the t-test of means comparison. Panel B reveals that market volatility are not different during election years when averaged over the whole sample. Election years, however, do have an impact on volatility when considered together with our industry sensitivities in the next section. Panels C and D report very strong differences in volatility depending on the degree of autocracy and predation. Admittedly, the high quartiles of these two measures may be capturing the low income countries.

We also execute differences in means tests for each country in the sample.[23] For 16 (14) countries out of 28, the level of volatility is (significantly) higher when the party orientation is left. Nine of these countries are from Continental Europe. However, seven developed and four emerging markets show higher volatility under right governments. These results do not allow us to make an unequivocal conclusion that left governments introduce more political uncertainty in all countries, rather we see a more complex picture that leads us to disentangle the political sources of stock return volatility using industry sensitivities.

B. Regression Results

In this section, we test our main prediction that more politically-sensitive industries exhibit higher levels of volatility during periods of political uncertainty and periods of low property rights protection as measured by political party orientation, elections, predatory policies, and autocracy. In each regression, we control for unobservable year, industry, and country characteristics by including fixed effects. The reported *p-values* (in parentheses) are calculated using heteroscedasticity-adjusted robust standard errors. The results are presented in Table VI. Every panel of the table contains four specifications, one for every sensitivity measure.

Panel A of Table VI presents the estimates of regression (4) with interaction terms between industry sensitivities and election year dummy. This specification provides the strongest justification of our hypotheses. Every sensitivity measure (interacted with election year) is positive and significant at the 10% level. Thus more labor-intensive industries, industries with a greater share of exports and imports, more governance-intensive industries, as well as more expropriation-prone industries,

[23] We do not report the results to save space.

exhibit higher volatilities during elections years. Since we control for industry and country fixed effects, these volatilities can be interpreted as volatilities relative to those of all other industries. Therefore, we find evidence that the political uncertainty introduced by elections results in higher volatility in industries that are more sensitive to all four channels of potential political influence in our study. However, election years themselves do not have an impact on stock markets volatility; the coefficients on the elections dummies are insignificant across all specifications. Thus, presumably non-politically sensitive industries actually become less volatile, resulting in unchanged volatility for the whole sample.

Next, we turn our attention to the impact of ruling party orientation on volatility. The results of the regressions appear in Panel B of Table VI. The primary variable of interest is labor intensity. We expect that more labor-intensive industries are more sensitive to political uncertainty when the party in power is left. The result confirms our expectations – the interaction term's coefficient between left party and labor intensity is positive and significant. This is consistent with our assertion that left parties will push for pro-labor policies, whereas it is not so obvious that left parties will necessarily disrespect contracts. On the contrary, it is possible, that left governments may tend to introduce rigidities in terms of bureaucracy and regulation that favor industries that rely on many contractual relationships (negative and significant coefficient on the governance interaction term). The other two interactions of sensitivities are not significant (foreign trade and expropriation). The left party dummy variable is positive and significant for three out of four specifications indicating that volatility of labor-intensive industries is higher when the party orientation is left.

The results of the effect of industry sensitivities coupled with the degree of government predation on volatility are reported in Panel D of Table VI. The predation index is positive and highly significant in all specifications: higher degree of government predation leads to greater volatility for the whole sample. Additionally, these increases are even more pronounced for firms in industries more dependant on a variety of inputs and therefore contract enforcement, or industries, whose input is more dependent on luck (oil prices). However, total volatility appears to decrease for more labor intensive industries in countries with predatory governments. We find the same result for autocratic regimes in Panel C. Presumably predatory governments and autocratic regimes apply consistent treatment with respect to firms from labor intensive industries, leading to decreased stock returns volatility.

In Panel C of Table VI, we report significant positive coefficients of the interaction terms in the governance and expropriation equations indicating that autocracy regimes have similarly positive effect on volatility as does the degree of government predation. The autocracy variable is only significant in the labor equation.

In summary, Table VI documents that politically-sensitive industries become more volatile during election years and volatility increases under a left ruling party or more predatory governments.

The differential impact of political variables on volatility is economically significant. To demonstrate, we compare a high-labor intensity industry (hotels, labor sensitivity = 0.445) with a low-labor intensity industry (foods products, labor sensitivity = 0.171). According to Table VI (Panels A-B), the coefficient on the interaction term of labor sensitivity with elections dummy is 0.164; the coefficient on the interaction of labor sensitivity with left government dummy is 0.233. These numbers mean that volatility is 4.5% higher for the hotels industry than for the foods production industry during the elections years; hotels industry's volatility is 6.6% higher than foods industry's volatility under left-wing governments.[24]

Similar calculations are performed to estimate the impact of predation on differential volatility between industries with high- and low- expropriation risk, conditional on their country of location. The coefficient on the interaction term of expropriation sensitivity with predation (Panel D of Table VI) is 0.200. Consider an expropriation-sensitive industry (oil and gas extraction, expropriation sensitivity = 0.049) and an industry with a low risk of expropriation (agriculture crops, expropriation sensitivity = -0.110). When these industries are located in a country like Norway (predation index = 0.51), the Oil industry is only 1.6% more volatile than the Agriculture industry. However, volatility of the oil industry is much larger (by 10.4%) relative to the agriculture industry in a country with high expropriation risk, such as Venezuela (predation index = 3.1). The differential volatility between the two countries is thus 8.8% (10.4% – 1.6%).[25]

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[24] It is calculated as $VOL_{hotel} / VOL_{food} = \exp\{0.164 \times [0.445 - 0.171]\} = 1.046$ for elections results and $VOL_{hotel} / VOL_{food} = \exp\{0.233 \times [0.445 - 0.171]\} = 1.066$ for party-orientation results. $VOL_{hotel\ (food)}$ denotes volatility for the hotels industry and food products industry, respectively.

[25] It is calculated as $VOL_{oil} / VOL_{agriculture} = \exp\{0.200 \times [0.049 - (-0.110)] \times 0.51\} = 1.016$ for Norway and $VOL_{oil} / VOL_{agriculture} = \exp\{0.200 \times [0.049 - (-0.110)] \times 3.1\} = 1.104$ for Venezuela. $VOL_{oil\ (agriculture)}$ denotes volatility for the oil and gas extraction industry and the agriculture crops industry, respectively.

C. Discussion

Our simple theoretical model suggests that the political environment should have an influence on stock market volatility. Yet, existing evidence on such influence is, at best, mixed. Some problems that researchers are facing are illustrated by some of our results. When we compare total volatility under right and left governments, we document significantly higher volatilities under left parties. The difference is, however, quite small, and, more importantly, eleven countries in our sample display the opposite volatility patterns. This highlights a potential for sample selection bias, along with unobserved heterogeneity attributed to country, time, and industry effects. Any, potentially unseen, changes to these factors might reverse the results.

Intuitively, one may expect that some firms are more sensitive to changes in political environment than others. There is considerable variation in firms' sensitivities to corporate governance standards, labor and other legislation, potential government intervention and so on. Therefore, different firms will react to changes in political environment differently. It is not immediately apparent which firms or industries are more vulnerable to changes in political structures. We approximate political sensitivity by four distinct measures: (1) labor sensitivity, (2) foreign trade sensitivity, (3) corporate governance sensitivity, and (4) expropriation risk sensitivity. In short, we contend that a firm sensitive to one of the above measures will be more sensitive to political uncertainty.

Our results are largely consistent with this hypothesis. National elections increase volatilities in all politically-sensitive firms. This is hardly surprising, as there is a potential that current government policies will change, which will be reflected by the changes in probabilities of a rare, potentially harmful event, such as government intervention.

Left governments have traditionally been associated with 'pro-labor' policies. It is, therefore, intuitive to expect labor-sensitive firms to exhibit higher levels of volatility during the rule of such governments, as they are more likely to engage in labor-protective policies that are disruptive to the firm. Our results are in line with such an expectation with labor intensive industries exhibiting higher volatilities under left governments.

Firms' reliance on explicit corporate governance is not constant across industries. Some firms use a lot of inputs from different industries, and are, therefore, relying heavily on contract enforcement and explicit governance by regulatory authorities.

Such firms might experience additional uncertainty when autocratic governments are in power; as such governments are normally associated with poor corporate governance standards. We indeed document higher volatilities in governance-sensitive industries during the rule of more autocratic governments, which is consistent with the above proposition. We also document higher systematic volatilities under autocratic governments, which may imply that stock prices become less informative in those years.

Finally, changes in political environment could lead to a potentially catastrophic event, such as expropriation. We measure industries' expropriation risk by how dependent are their profits on luck, rather than managerial effort. In case of the former, high profits are unlikely to fade once the government takeover has taken place, whereas in case of the later there is a strong chance of profits disappearing. We assume that those industries whose profits are largely driven by levels of commodity prices (oil) are more prone to expropriation and, therefore, will experience greater uncertainty when predatory governments are in power. Our results are consistent with such an expectation.

On the other hand, our expectation that firms that are more exposed to foreign trade will experience higher volatility during autocratic governments was not supported by the data. However, such firms have been found to have higher systematic volatilities under autocratic governments. Overall, our results demonstrate a strong link between political sensitivities and volatility.

4. Volatility Decomposition

Although we document that political structure has a strong impact of industry volatility it is not clear which part of volatility (idiosyncratic or systematic) drives our results. It is interesting to analyze how political uncertainty is reflected in the volatility components so as to produce the increase in total volatility documented in the previous section. Furthermore, the insignificance of the autocracy variable in Panel C of Table VI invites the conjecture that this particular type of political uncertainty affects the two components of volatility in opposing directions thereby leaving the total volatility unchanged.

The components of the total variation of stock returns, one of which is idiosyncratic volatility, have been shown to exhibit a number of regularities in recent research. Morck, Yeung, and Yu (2000) find evidence that return correlations are caused by low institutional quality, rather than by company fundamentals and conjecture that this effect has informational efficiency implications. Jin and Myers (2006) shed light on the link between poor institutions and R^2 by establishing that the opacity of a firm is related to low idiosyncratic volatility and therefore high correlation with market factors. Campbell et al. (2001) provide the first dramatic account for the increasing time trend in idiosyncratic volatility observed in the US stock market over the last four decades (1962 - 1996). They speculate that the rise in idiosyncratic volatility may be explained by several recent trends: the breaking up of conglomerates; issuance of stock earlier in the firm's life cycle; the shift towards option based executive compensation; and institutionalization of financial markets.

A. Methodology

To decompose volatility into firm-specific volatility and systematic volatility, we follow Morck, Yeung, and Yu (2000) and start by estimating the following regression,

$$r^c_{firm,w,t} = \alpha^c_{firm,t} + \beta^c_{1,firm,t} r^c_{m,w,t} + \beta^c_{2,firm,t} r^{US}_{m,w,t} + \varepsilon^c_{firm,w,t}, \qquad (9)$$

where $r^c_{firm,w,t}$ is *firm*'s weekly return in year *t*, $r^c_{m,w,t}$ is the weekly value-weighted local market return in year t, and $r^{US}_{m,w,t}$ is the weekly S&P 500 return in year t. All returns are expressed in local currency including the S&P 500 return. We drop firms with fewer than 10 weekly observations in a year. Local market indexes exclude the firm in question to avoid spurious correlation between individual returns and indexes for markets with few firms.

For every firm *i* from country *c* and year *t*, firm-specific volatility is calculated as unexplained (residual) sum of squares (scaled by the number of weeks), summed over all weeks (*w*) in a year *t*.

$$FSV^c_{firm,t} = \frac{\sum_{w=1}^{W^c_{firm,t}} \hat{\varepsilon}^c_{firm,w,t}}{W^c_{firm,t}}, \qquad (10)$$

where $\hat{\varepsilon}^c_{ifirm,w,t} = r^c_{firm,w,t} - \hat{\alpha}^c_{firm,t} - \hat{\beta}^c_{1,firm,t} r^c_{m,w,t} - \hat{\beta}^c_{2,firm,t} r^{US}_{m,w,t}$ and $\hat{\alpha}^c_{firm,t}$, $\hat{\beta}^c_{1,firm,t}$ and $\hat{\beta}^c_{2,firm,t}$ are estimated coefficients.

The systematic volatility is the explained (by local market index and U.S. index) sum of squares from the regression above,

$$SYS^c_{firm,t} = \sum_{w=1}^{W^c_{firm,t}} (\hat{r}^c_{firm,w,t} - \bar{r}^c_{firm,w,t})^2 \ . \qquad (11)$$

with

$$\hat{r}^c_{firm,w,t} = \alpha^c_{firm,t} + \hat{\beta}^c_{1,firm,t} r^c_{m,w,t} + \hat{\beta}^c_{2,firm,t} r^{US}_{m,w,t} \ . \qquad (12)$$

We aggregate the two series by calculating the industry average of firm measures. Thus,

$$FSV^c_{ind,t} = \frac{\sum_{firm=1}^{I^c_t} FSV^c_{firm,t}}{I^c_t}$$

(13)

and

$$SYS^c_{ind,t} = \frac{\sum_{firm=1}^{I^c_t} SYS^c_{firm,t}}{I^c_t} \qquad (15)$$

Finally, we compute the R^2s as,

$$R^{2c}_{ind,t} = \frac{SYS^c_{ind,t}}{SYS^c_{ind,t} + FSV^c_{ind,t}} \ . \qquad (16)$$

To improve the normality of this variable, we also construct a logarithmic transformation of R^2 as $LR^2_{ind,t} = \ln\left(R^{2,c}_{ind,t} / (1 - R^{2,c}_{jnd,t})\right)$. A high $LR^2_{ind,t}$ represents greater systematic proportion in total stock return variation and therefore lower firm-specific variation.

The summary statistics by industry, country, correlation coefficients, and mean comparison tests (conditional on national elections, party orientation, predation index, and autocracy index) appear in Tables II, III, IV, and V, respectively. According to the correlation coefficients (Table IV), firms in less labor intensive, but more governance and expropriation sensitive industries or in lower GDP-per-capita, or higher predation, autocracy or politically risky countries have significantly higher market model R^2. The means comparison tests (Table V) reveal that R^2 is higher when a left party is in power, and it is not different during election years when averaged over the whole sample. R^2 is generally higher in more predatory and autocratic countries. This result is reconfirms the findings by Morck, Yeung and Yu (2000) that R2 is larger in countries with better institutional development.

In the next section, we repeat the volatility regressions using $LR^2_{ind,t}$ as the dependent variable. A positive coefficient on any of our political sensitivity measures interacted with politics variable would imply that the systematic proportion in stock return variation increases by a disproportionally greater amount (compared to firm-specific volatility) for politically-sensitive industries.

B. Results

Table VII reports the results of regressions with LR^2 – the log transformation of the ratio of systematic volatility to total volatility – as the dependent variable on four types of political uncertainty (election years in Panel A, party orientation in Panel B, autocracy in Panel C and predation in Panel D) and four types of industry sensitivity to political risk (labor, trade, governance and expropriation equation in each panel). As before, in each regression we control for unobservable year, industry, and country characteristics, and the reported *p-values* based robust standard errors.

The election dummy variable in Panel A of Table VII is significant in three out of the four equations, indicating that LR^2 is higher in election years. However industries sensitive to trade, governance and expropriation do not necessarily have higher LR^2. Note, that in Panel A of Table VI (volatility regressions) the election dummy is insignificant, but the interaction terms are significant. It is possible that although the systematic portion of returns variation increases on average for the whole sample, the firm-specific portion decreases and overall volatility does not change. On the other hand, more politically sensitive industries (through trade, governance and expropriation) exhibit higher volatility without changing the proportions of systematic and firm-specific variation.

In Panel B we document significantly higher LR^2 under a ruling party with left orientation (except in the labor equation) without any stronger effect for politically sensitive industries. The lack of the significance does not necessarily mean that the systematic portion of stock return volatility is not affected by political uncertainty; rather it means that the increase in volatility during election years is caused by an increase in both volatility components – firm specific volatility and systematic volatility.

Autocracy has a particularly strong effect on LR^2 in Panel C of Table VII, implying that the proportion of systematic risk increases for politically sensitive industries in an autocratic political environment. The coefficient of the labor intensity – autocracy interaction term is significantly positive in Panel C of Table VII and significantly negative in Panel C of Table VII. This contrasting result can be seen to imply an even greater reduction in the firm-specific part of returns variability. We confirm this in unreported regression results with firm-specific variation as the dependent variable.

5. Concluding Remarks

Does politics influence finance? This question has sparked numerous theoretical and empirical inquires. Existing literature does not provide a clear-cut answer to this question. While the 'partisan' theory asserts that politics should influence the economy, the 'rational partisan theory' argues otherwise. Empirical evidence is also scant and mixed. This paper attempts to assess the impact of political structure on stock market volatility using within-countries, across-industries methodology.

We hypothesize that various industries react to political structures and political events differently. Moreover, we expect industries that are more sensitive to political structures to exhibit higher levels of volatility. Such within-country setup allows us to control for country, industry, and time fixed effects, thus mitigating the omitted variable bias and model misspecification.

Several measures of political sensitivities are employed: labor sensitivity (labor intensive industries should be more affected by regulations imposed left-wing governments); foreign trade sensitivity (foreign trade-intensive industries are more likely to be affected by government regulators, who seek to protect incumbents); governance sensitivity (firms that use inputs from different industries are more dependent on contracts enforcement); and expropriation sensitivity (industries, whose performance is likely to be affected by luck, rather than by skill, are more prone to expropriation).

We provide substantiation that there is a strong link between political structures and volatility. Although the initial comparison of market volatilities under left- and right-wing governments did not reveal a clear-cut relationship between party orientation and volatility (a result that is largely consistent with prior studies), industry-specific analysis provided robust evidence of the impact of politics on volatility. More specifically, we document that labor intensive, foreign trade-sensitive, governance-sensitive and expropriation-sensitive industries exhibit higher volatilities during election years. Moreover, labor-intensive firms display higher volatilities when left governments are in power. Predatory and autocratic governments have a positive effect on volatilities in industries that require good governance or industries with higher expropriation risk. The volatility decomposition results indicate that the increase in total volatility for politically-sensitive industries is mostly driven by an increase in systematic risk and/or a simultaneous decrease in firm-specific risk.

We argue that our results are consistent with the ‘peso problem’ explanation of excess volatility – the market anticipates a very significant event (change in political regime, significant changes to laws, expropriation) that may or may not materialize. Indeed, firms that are more prone to experience such significant, even catastrophic events (such as expropriation) are shown to have excess volatilities when the probabilities of such events are higher. We believe our paper contributes to understanding of the sources of volatility dynamics in different industries and countries.

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Figure 1: Labor sensitivities: This graph plots industry labor sensitivities, 1990-2005 average. Labor sensitivity is defined as the value of labor inputs over the total value of inputs. We use time-variant measures from 1990 through 1995. For years 1996-2005, we rely on time-invariant values for 1995. Labor sensitivity is computed by dividing the value of labor inputs over the total value of inputs. Data on inputs is from the input-output database developed by Dale W. Jorgenson and described in Jorgenson (1990) and Jorgenson and Stiroh (2000).

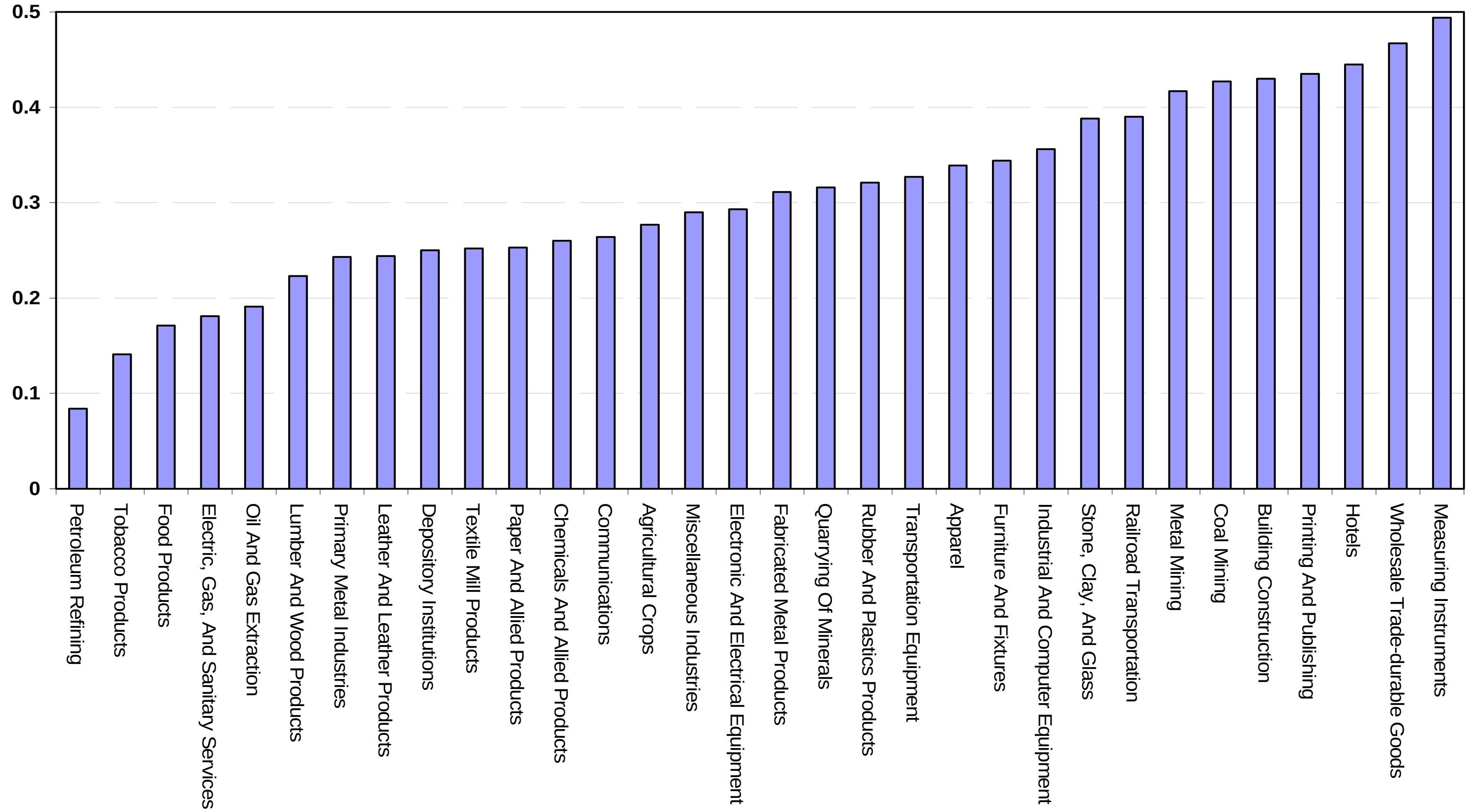

Figure 2: Foreign trade sensitivities: Foreign trade sensitivities assess the exposure of a particular industry to foreign trade. It is defined as (value of exports + value of imports) / value of output for 2002. The trade data are obtained from the United States International Trade Commission and contain statistics on the values of exports and imports.

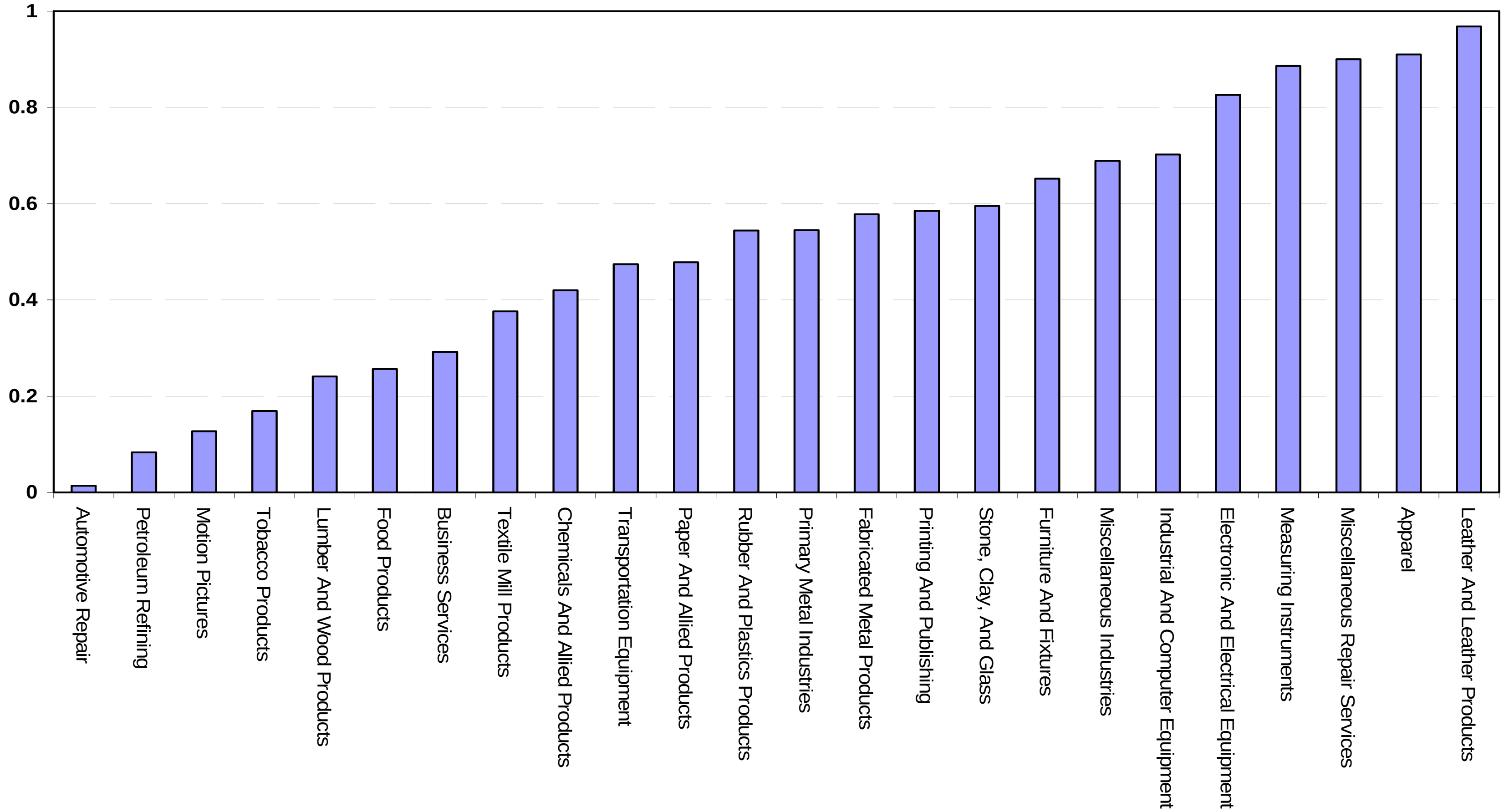

Figure 3: Governance sensitivities: Governance sensitivities are defined as the concentration of purchases of a certain industry, $C_{i,j} = 1 - \sum_j \phi_{i,j}^2$, where $\phi_{i,j}$ is the share of input of industry *j* in the production of industry *i*. The data comes from input-output tables of the Bureau of Economic Analysis. The data are assembled at the 2-digit SIC level, and is collected for the year 2005.

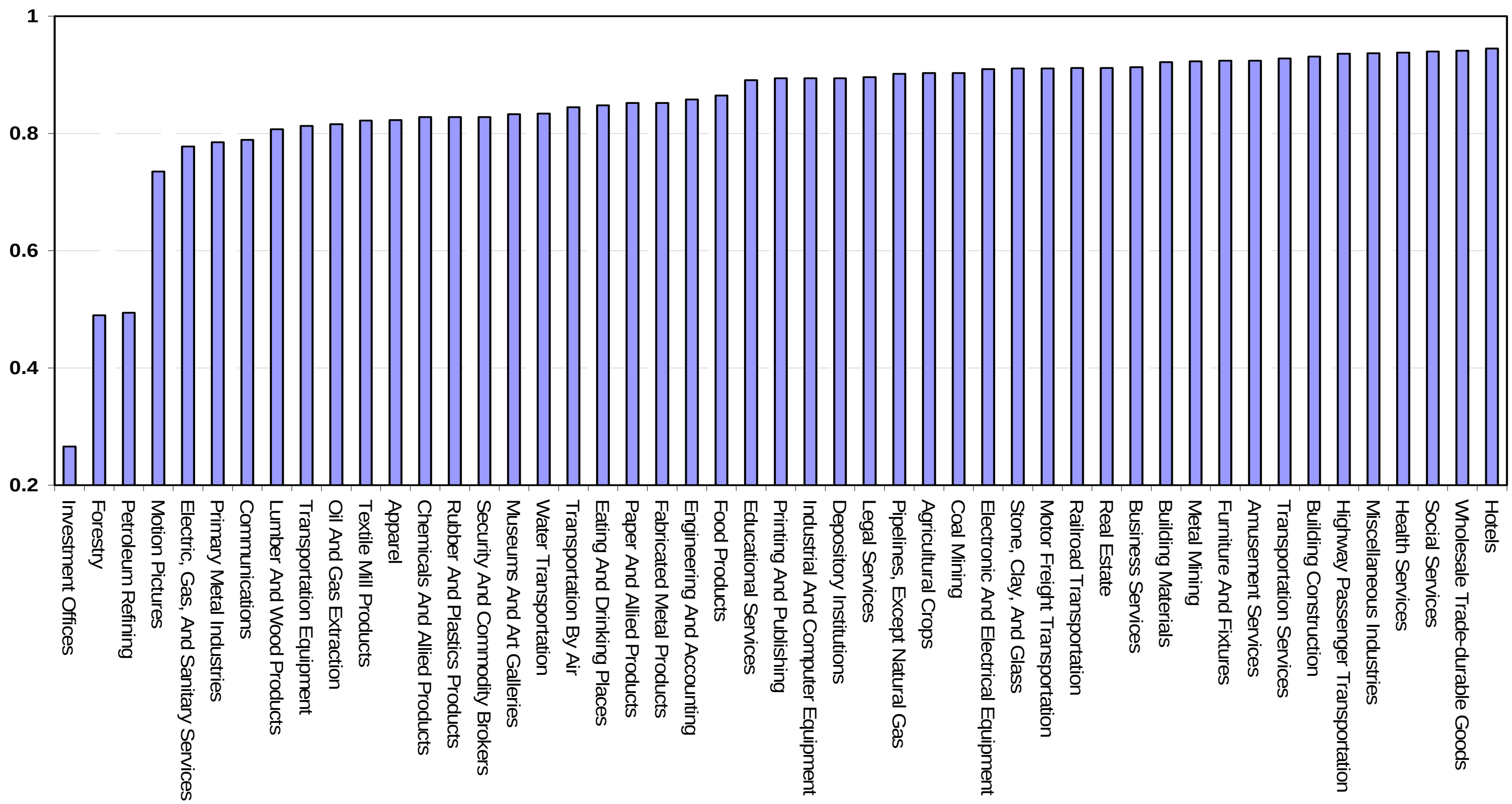

Figure 4: Expropriation sensitivities. Industry expropriation sensitivities are defined as the coefficient on the log of inflation-adjusted oil price of an industry-specific regression of median industry valuation (*Q*) on a constant (α), a time trend (*t*) and the log of oil price (*P*) run using all firms in COMPUSTAT during the time period from 1950 through 2005. The regression is $Q_t^{SIC2} = \alpha^{SIC2} + t^{SIC2} + \beta^{SIC2} \ln\left(P_t^{oil}\right) + \mu_t^{SIC2}$.

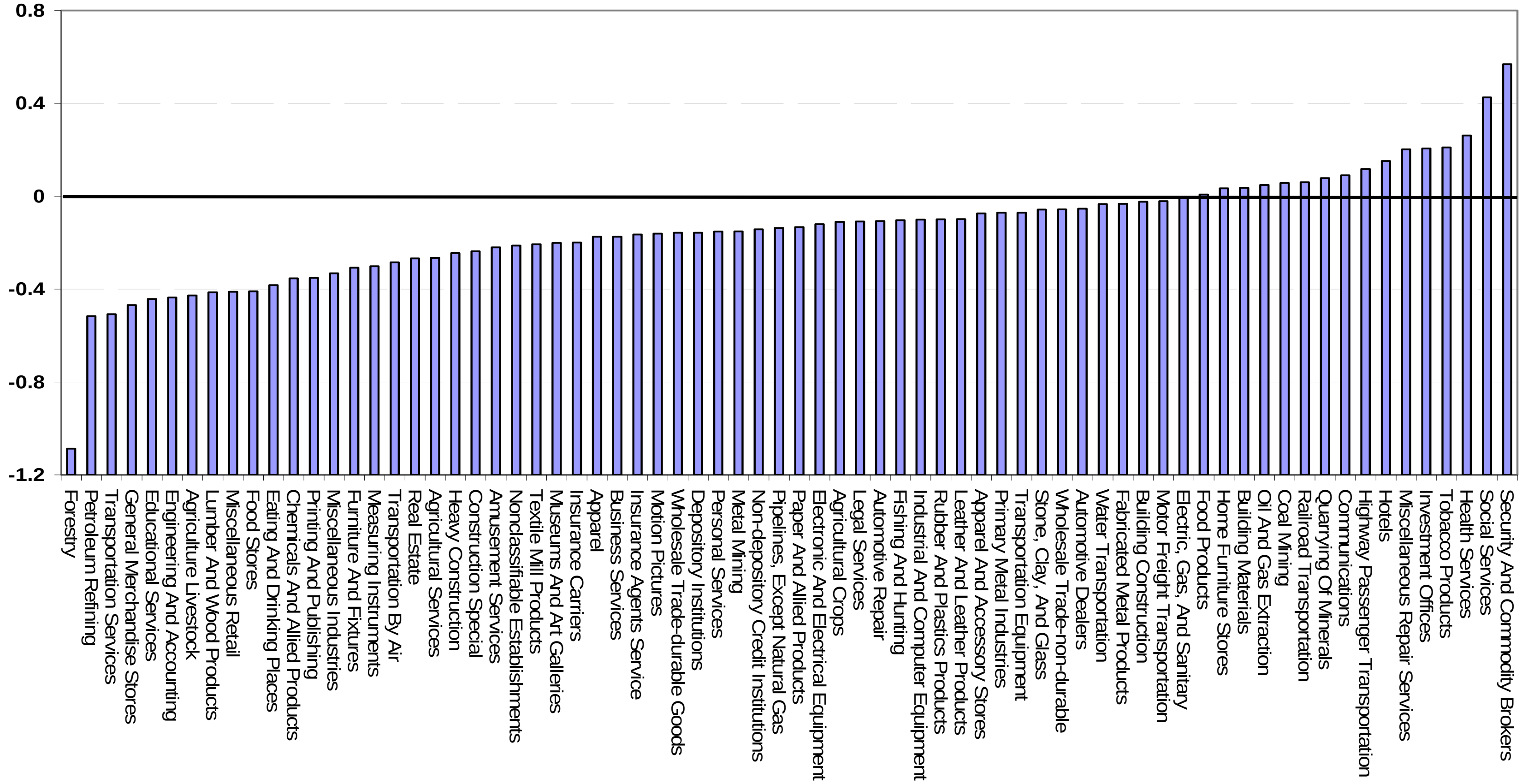

Figure 5: Number of nationalizations by industry (1955-1990 total) and industry oil dependency: Nationalizations are defined as forced divestment of foreign property. Industry oil price-dependency is defined as the coefficient on the log of inflation-adjusted oil price of an industry-specific regression 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 $Q_t^{ind} = \alpha^{ind} + t^{ind} + \beta^{ind} \ln\left(P_t^{oil}\right) + \mu_t^{ind}$. 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). Source: Durnev and Guriev (2007).

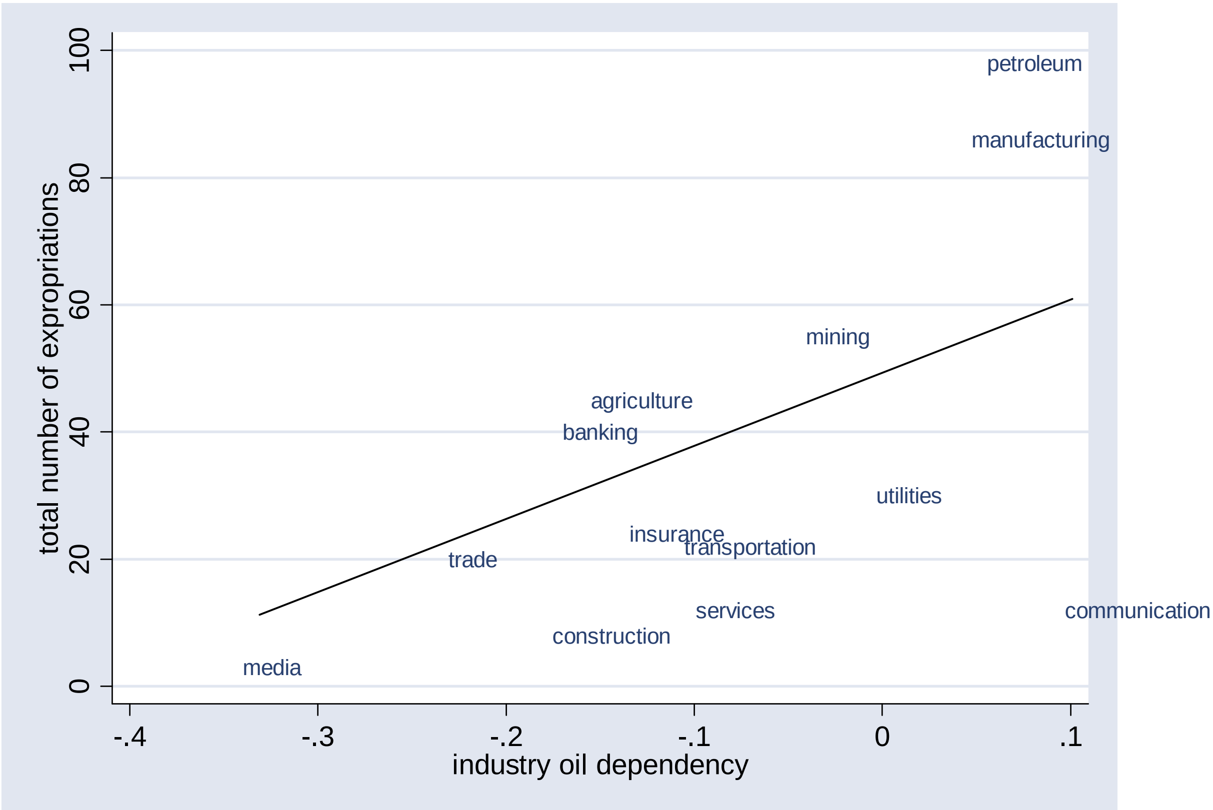

Table I
Descriptive statistics by industry, 1990-2005.

This table contain summary statistics by industry (averages across industries and years, 1990-2005). SIC code is 2-digit Standard Industry Classification code. The variables are: labor sensitivity, foreign trade sensitivity, governance sensitivity, expropriation sensitivity, volatility, and R^2. N is the aggregate number of industry observations across all countries and years, 1990-2005.

		Political sensitivities						
industry name	**SIC code**	**labor**	**trade**	**governance**	**expropriation**	**VOL**	**R^2**	**N**
Agricultural Crops	100	0.277		0.903	-0.110	0.006906	0.164	210
Agriculture Livestock	200				-0.428	0.006573	0.189	240
Agricultural Services	700				-0.265	0.008070	0.159	163
Forestry	800			0.490	-1.087	0.005624	0.182	230
Fishing And Hunting	900				-0.103	0.009179	0.185	63
Metal Mining	1000	0.417		0.923	-0.151	0.009726	0.187	364
Coal Mining	1200	0.427		0.903	0.057	0.011713	0.200	150
Oil And Gas Extraction	1300	0.191		0.816	0.049	0.007832	0.212	329
Quarrying Of Minerals	1400	0.316			0.078	0.009059	0.165	235
Building Construction	1500	0.430		0.931	-0.024	0.006460	0.196	510
Heavy Construction	1600				-0.245	0.005767	0.211	424
Construction Special	1700				-0.237	0.005760	0.171	306
Food Products	2000	0.171	0.256	0.865	0.007	0.004813	0.184	702
Tobacco Products	2100	0.141	0.169		0.210	0.003424	0.195	245
Textile Mill Products	2200	0.252	0.376	0.822	-0.207	0.007572	0.167	490
Apparel	2300	0.339	0.910	0.823	-0.174	0.005943	0.179	426
Lumber And Wood Products	2400	0.223	0.241	0.807	-0.414	0.005921	0.177	364
Furniture And Fixtures	2500	0.344	0.652	0.924	-0.308	0.006481	0.162	303
Paper And Allied Products	2600	0.253	0.478	0.852	-0.133	0.005299	0.188	573
Printing And Publishing	2700	0.435	0.585	0.894	-0.352	0.006125	0.171	458
Chemicals And Allied Products	2800	0.260	0.420	0.828	-0.354	0.005863	0.201	636
Petroleum Refining	2900	0.084	0.083	0.494	-0.516	0.004711	0.282	380
Rubber And Plastics Products	3000	0.321	0.544	0.828	-0.100	0.005693	0.203	492
Leather And Leather Products	3100	0.244	0.968		-0.099	0.005972	0.203	199
Stone, Clay, And Glass	3200	0.388	0.595	0.911	-0.058	0.005338	0.227	618
Primary Metal Industries	3300	0.243	0.545	0.785	-0.071	0.006354	0.221	630
Fabricated Metal Products	3400	0.311	0.578	0.852	-0.033	0.006440	0.172	470
Industrial And Computer Equipment	3500	0.356	0.702	0.894	-0.101	0.006589	0.185	548
Electronic And Electrical Equipment	3600	0.293	0.826	0.910	-0.121	0.007353	0.200	549
Transportation Equipment	3700	0.327	0.474	0.813	-0.071	0.005232	0.198	536
Measuring Instruments	3800	0.494	0.886		-0.301	0.007233	0.191	349
Miscellaneous Industries	3900	0.290	0.689	0.937	-0.332	0.006829	0.183	353
Railroad Transportation	4000	0.390		0.912	0.060	0.004044	0.188	118
Highway Passenger Transportation	4100			0.936	0.117	0.006053	0.165	217

Table I continued

				Political sensitivities				
industry name	**SIC code**	**labor**	**trade**	**governance**	**expropriation**	**VOL**	**R^2**	**N**
Motor Freight Transportation	4200			0.911	-0.021	0.005597	0.197	302
Water Transportation	4400			0.834	-0.034	0.004630	0.199	488
Transportation By Air	4500			0.845	-0.285	0.005287	0.237	421
Pipelines, Except Natural Gas	4600			0.902	-0.137	0.006214	0.172	29
Transportation Services	4700			0.928	-0.508	0.005904	0.187	414
Communications	4800	0.264		0.789	0.090	0.005865	0.248	597
Electric, Gas, And Sanitary Services	4900	0.181		0.778	-0.009	0.004663	0.210	583
Wholesale Trade-durable Goods	5000	0.467		0.941	-0.157	0.006656	0.185	567
Wholesale Trade-non-durable Goods	5100				-0.057	0.005807	0.204	618
Building Materials	5200			0.922	0.036	0.004767	0.187	134
General Merchandise Stores	5300				-0.469	0.004234	0.222	347
Food Stores	5400				-0.409	0.004363	0.221	450
Automotive Dealers	5500				-0.054	0.005142	0.162	255
Apparel And Accessory Stores	5600				-0.074	0.005818	0.160	324
Home Furniture Stores	5700				0.034	0.006614	0.178	302
Eating And Drinking Places	5800			0.848	-0.383	0.005751	0.200	302
Miscellaneous Retail	5900				-0.411	0.006383	0.178	386
Depository Institutions	6000	0.250		0.894	-0.157	0.003994	0.266	724
Non-depository Credit Institutions	6100				-0.143	0.008817	0.209	316
Security And Commodity Brokers	6200			0.828	0.569	0.006975	0.232	499
Insurance Carriers	6300				-0.199	0.003551	0.260	519
Insurance Agents Service	6400				-0.165	0.005857	0.163	170
Real Estate	6500			0.912	-0.268	0.006111	0.182	548
Investment Offices	6700			0.266	0.205	0.006289	0.203	546
Hotels	7000	0.445		0.945	0.152	0.005879	0.207	489
Personal Services	7200				-0.152	0.004790	0.126	113
Business Services	7300		0.292	0.913	-0.174	0.007876	0.195	553
Automotive Repair	7500		0.014		-0.107	0.005596	0.188	172
Miscellaneous Repair Services	7600		0.900		0.202	0.004992	0.159	57
Motion Pictures	7800		0.127	0.735	-0.161	0.008063	0.151	208
Amusement Services	7900			0.924	-0.220	0.006914	0.145	356
Health Services	8000			0.938	0.262	0.006349	0.158	298
Legal Services	8100			0.896	-0.109	0.008274	0.063	9
Educational Services	8200			0.891	-0.443	0.009082	0.162	186
Social Services	8300			0.940	0.425	0.010031	0.097	72
Museums And Art Galleries	8400			0.833	-0.201	0.004971	0.095	25
Engineering And Accounting	8700			0.858	-0.436	0.006989	0.189	442
Nonclassifiable Establishments	9900				-0.212	0.006853	0.145	78
Average		0.307	0.513	0.847	-0.139	0.006	0.186	
Total								25,779

Table II
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 type	Year	Elections dates	Country	System	Party type	Year	Elections dates	Country	System	Party type	Year	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	-	-			2000-2004: 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	Luxembg.	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	-	-

Table II continued

Country	System	Party type	Year	Election dates	Country	System	Party type	Year	Election dates	Country	System	Party type	Year	Election dates
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	-	-
Egypt	Parliamentary	1990-1995: 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
		1991-1995: C	1991	17-Mar-91			1994-1996: R	1993	6-Nov-93			2001-2004: 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
		1994-1997: R	1993	21-Mar-93			1991-1993: L	-	-			2003-2004: NA	2002	3-Nov-02
		1998-2002: L	1997	25-May-97			1994-1997: L	1993	13-Sep-93	UK	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	US	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	-	-
		2001-2004: L	2000	9-Apr-00			1996-2000: R	1995	9-Apr-95			1994-1998: NA	1993	5-Dec-93
		-	2004	7-Mar-04			2001: R	2000	9-Apr-00			1999-2000: NA	1998	6-Dec-98
Hong Kong	NA	NA	NA	NA			2002-2004: C	2001	8-Apr-01			2001-2004: NA	2000	30-Jul-00
					Philippines	NA	1990-1992: NA	-	-	Zimbabwe	Parliamentary	1990-1996: NA	1990	27-Mar-90

Table II continued

Country	System	Party type	Year	Election dates	Country	System	Party type	Year	Election dates	Country	System	Party type	Year	Election dates
Hungary	Parliamentary	1990: L	-	-			1993-1998: C	1992	11-May-92			1997-2000: NA	1996	15-Mar-96
		1991-1994: R	1990	25-Mar-90			1999-2000: NA	1998	11-May-98			2001-2002: NA	2000	-
		1995-1998: L	1994	8-May-94			2001-2004: C	-	-			2003-2004: 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 III
Descriptive statistics by country, 1990-2005.

This table contain summary statistics country (averages across industries and years, 1990-2005). The variables are: GDP per capita, volatility, R^2, predation index, and autocracy index. N is the aggregate number of country observations across all industries and years, 1990-2005.

Country	GDP per capita	VOL	R^2	Predation	Autocracy	N
Argentina	$11,268	0.006436	0.303	1.910	2.616	333
Australia	$24,471	0.009791	0.100	0.283	0.000	950
Austria	$26,332	0.003517	0.170	0.628	0.000	379
Belgium	$25,357	0.002659	0.159	0.969	0.000	498
Brazil	$6,927	0.011180	0.187	2.714	2.000	634
Canada	$25,968	0.008021	0.093	0.404	0.000	999
Chile	$8,220	0.004070	0.181	0.797	1.720	467
China	$3,831	0.004351	0.463	3.041	17.000	668
Columbia	$6,281	0.004551	0.262	2.660	2.521	145
Czech Rep.	$13,658	0.005507	0.154	1.563	0.000	127
Denmark	$25,857	0.003072	0.123	0.495	0.000	533
Egypt	$3,493	0.003918	0.299	2.383	15.186	91
Finland	$23,859	0.004166	0.154	0.449	0.000	478
France	$24,528	0.004354	0.116	0.855	1.000	984
Germany	$23,944	0.004693	0.129	0.710	0.000	867
Greece	$16,296	0.006337	0.273	1.714	0.000	657
Hong Kong	$23,850	0.007283	0.188	0.300		857
Hungary	$12,076	0.006039	0.200	1.370	0.000	178
India	$2,234	0.007529	0.225	2.676	1.321	635
Indonesia	$2,748	0.012980	0.217	3.256	10.854	643
Ireland	$25,375	0.006307	0.153	0.701	1.807	287
Israel	$18,806	0.004228	0.301	1.387	0.447	414
Italy	$23,802	0.002786	0.218	1.794	0.000	603
Japan	$24,286	0.004204	0.195	0.679	0.000	1,031
Luxembourg	$46,042	0.003098	0.139		0.000	117
Malaysia	$7,785	0.005248	0.331	1.672	6.661	900
Mexico	$8,111	0.004786	0.205	2.779	4.736	374
Morocco	$3,791	0.001571	0.268		16.316	98
Netherlands	$25,648	0.002871	0.139	0.477	0.000	570
New Zealand	$19,669	0.005795	0.110	0.191	0.000	587
Norway	$31,475	0.005041	0.163	0.505	0.000	443
Pakistan	$1,821	0.006078	0.229	3.109	8.164	309
Peru	$4,588	0.007115	0.128	2.630	6.946	184
Philippines	$3,678	0.011651	0.193	2.537	2.000	444
Poland	$10,115	0.004820	0.215	1.677	0.783	316
Portugal	$16,129	0.004438	0.161	1.106	0.000	368
Russia	$8,110	0.009540	0.294	3.441	4.382	125
Singapore	$24,432	0.006263	0.235	0.282	12.000	784
South Africa	$9,540	0.009443	0.136	2.250	1.549	751
South Korea	$15,005	0.007875	0.220	1.107	3.057	838
Spain	$19,558	0.002694	0.175	1.243	0.000	559
Sri Lanka	$2,554	0.006406	0.322	2.577	4.756	206
Sweden	$25,153	0.005109	0.171	0.292	0.000	628
Switzerland	$29,194	0.002994	0.143	0.375	0.000	554

Table III continued

Country	GDP per capita	VOL	R^2	Predation	Autocracy	N
Taiwan	$20,284	0.004770	0.326	0.982	2.572	700
Thailand	$6,052	0.007703	0.243	1.570	1.938	788
Turkey	$5,853	0.010305	0.227	2.261	2.425	560
UK	$23,484	0.004827	0.130	0.151	0.000	1,036
Venezuela	$5,696	0.008139	0.283	3.104	2.547	137
Zimbabwe	$1,974	0.017277	0.197	4.000	16.103	147
Average	$15,584	0.006077	0.205	1.543	3.131	520
Total						25,981

Table IV
Correlation coefficients between main variables.

This table reports the correlation coefficients between the main variables. The numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. *LVOL* is the log of volatility. LR^2 is the logarithmic transformation of R^2, where R^2 is the ratio of systematic returns variation to total returns variation (the sum of firm-specific variation and systematic variation). The coefficients significant at the 10% level (based on a two-tailed test) or higher are in boldface.

	LVOL	LR^2	*labor sensitivity*	*foreign trade sensitivity*	*governance sensitivity*	*expropriation sensitivity*	*GDP per capita*	*predation*
log transformation of R^2	**0.023**							
	(0.00)							
labor sensitivity	**0.120**	**-0.052**						
	(0.00)	(0.00)						
foreign trade sensitivity	**0.032**	-0.014	**0.118**					
	(0.00)	(0.11)	(0.00)					
governance sensitivity	**-0.044**	**0.049**	**-0.709**	**-0.214**				
	(0.00)	(0.00)	(0.00)	(0.00)				
expropriation sensitivity	**0.031**	**0.012**	**0.042**	**0.043**	**-0.026**			
	(0.00)	(0.06)	(0.00)	(0.00)	(0.00)			
GDP per capita	**-0.219**	**-0.291**	**0.041**	**0.030**	0.003	-0.0048		
	(0.00)	(0.00)	(0.00)	(0.00)	(0.64)	(0.44)		
predation	**0.215**	**0.246**	**-0.063**	**-0.036**	0.011	**0.0103**	**-0.7767**	
	(0.00)	(0.00)	(0.00)	(0.00)	(0.14)	(0.10)	(0.00)	
autocracy	**0.101**	**0.298**	-0.011	**-0.035**	**-0.013**	**-0.0142**	**-0.4712**	**0.4429**
	(0.00)	(0.00)	(0.24)	(0.00)	(0.10)	(0.03)	(0.00)	(0.00)

Table V
Mean comparison tests of volatility and R2 measures conditional on party orientation, elections, autocracy, and predation.

This table reports the t-statistics of means comparison tests of volatility and R^2 across different groups. The groups are: left party vs. right party (Panel A); elections vs. no elections (Panel B); high-autocracy vs. low-autocracy (Panel C); and high-predation vs. low predation (Panel D). The numbers in parentheses are probability levels at which the hypothesis of equal means can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in boldface. N is the number of observations in each group.

Panel A: Split by party orientation

Left (right) group contain observations that belong to countries and years with parties classified as left (right).

Party	N	VOL	R^2
Left party	8,464	0.00613	0.193
Right party	9,169	0.00560	0.187
Left party – Right party		0.000533	0.00607
t-statistic		**5.5624**	**2.6147**
p-value		(0.00)	(0.00)

Panel B: Split by elections

Election (no-election) group contain observations that belong to years of national elections.

Elections	N	VOL	R^2
Election	5,417	0.00614	0.203
No election	17,843	0.00622	0.200
Election – No election		-0.00008	0.00245
t-statistic		-0.716	1.016
p-value		(0.24)	(0.16)

Panel C: Split by autocracy index

High-autocracy (low-autocracy) group contain observations that belong to the top 75th percentile, autocracy > 2, (bottom 25th percentile, autocracy = 0) of the autocracy index.

Autocracy	N	VOL	R^2
High autocracy	8,104	0.00661	0.257
Low autocracy	12,295	0.00497	0.158
High – Low		0.00164	0.0997
t-statistic		**18.957**	**46.744**
p-value		(0.00)	(0.00)

Table V continued

Panel D: Split by predation index

High-predation (low-predation) group contain observations that belong to the top 75th percentile, predation > 2.08, (bottom 25th percentile, predation < 0.499) of the predation index.

Predation	N	VOL	R^2
High predation	6,785	0.00830	0.244
Low predation	6,319	0.00640	0.146
High – Low		0.00190	-0.0986
t-stat		**14.081**	**38.586**
p-val		(0.00)	(0.00)

Table VI
Volatility Regressions
Regressions of log of volatility on interaction terms including country, industry, and year fixed effects, and with robust standard errors.

This table reports the results of OLS regressions of log of volatility used as a dependent variable. The political sensitivities (labor, foreign trade, governance, and expropriation) are interacted with nation elections (Panel A), party orientation dummy (Panel B), autocracy index (Panel C), or predation index (Panel D). All regressions include industry, country, and year fixed effects. Numbers in parentheses are probability levels at which the hypothesis of no relationship can be rejected. The computed p-values are based on robust (heteroscedasticity-consistent) standard errors. 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.

Panel A: Elections

dependent variable	**LVOL**			
country variable	**ELECTIONS**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × elections	**0.163504**			
	(0.02)			
foreign trade sensitivity × elections		**0.022173**		
		(0.05)		
governance sensitivity × elections			**0.036178**	
			(0.07)	
				0.005784
expropriation sensitivity × elections				(0.09)
elections	0.038641	0.022522	0.003647	0.010326
	(0.42)	(0.23)	(0.86)	(0.44)
regression R^2	0.402	0.369	0.371	0.353
number of observations	12,791	12,229	17,588	23,100

Panel B: Party orientation

dependent variable	**LVOL**			
country variable	**LEFT PARTY**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × left party	**0.233012**			
	(0.10)			
foreign trade sensitivity × left party		-0.005493		
		(0.73)		
governance sensitivity × left party			**-0.294490**	
			(0.00)	
				0.172164
expropriation sensitivity × left party				(0.16)
left party	-0.028423	**0.051234**	**0.084069**	**0.063594**
	(0.54)	(0.02)	(0.00)	(0.00)
regression R^2	0.401	0.365	0.370	0.351
number of observations	12,521	11,986	17,194	22,622

Panel C: Autocracy

dependent variable	LVOL			
country variable	**AUTOCRACY**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × autocracy	**-0.078430**			
	(0.00)			
foreign trade sensitivity × autocracy		0.001512		
		(0.54)		
governance sensitivity × autocracy			**0.012786**	
			(0.03)	
expropriation sensitivity × autocracy				**0.065910**
				(0.01)
autocracy	**0.027017**	-0.002241	-0.001369	-0.001061
	(0.00)	(0.62)	(0.75)	(0.76)
regression R^2	0.422	0.389	0.391	0.371
number of observations	12,527	11,973	17,258	22,658

Panel D: Predation

dependent variable	LVOL			
country variable	**PREDATION**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × predation	**-0.475641**			
	(0.00)			
foreign trade sensitivity × predation		0.001240		
		(0.87)		
governance sensitivity × predation			**0.140921**	
			(0.00)	
expropriation sensitivity × predation				**0.199711**
				(0.03)
predation	**0.299078**	**0.129768**	**0.141431**	**0.173621**
	(0.00)	(0.00)	(0.00)	(0.00)
regression R^2	0.394	0.362	0.359	0.344
number of observations	13,933	13,442	19,294	25,417

Table VII
R^2 Regressions
Regressions of log transformation of R^2 on interaction terms including country, industry, and year fixed effects, and with robust standard errors.

This table reports the results of OLS regressions of log transformation of R^2. The political sensitivities (labor, foreign trade, governance, and expropriation) are interacted with nation elections (Panel A), party orientation dummy (Panel B), autocracy index (Panel C), or predation index (Panel D). All regressions include industry, country, and year fixed effects. Numbers in parentheses are probability levels at which the hypothesis of no relationship can be rejected. The computed p-values are based on robust (heteroscedasticity-consistent) standard errors. 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.

Panel A: Elections

dependent variable	**LOG R^2**			
country variable	**ELECTIONS**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × elections	**0.113642**			
	(0.09)			
foreign trade sensitivity × elections		-0.012294		
		(0.56)		
governance sensitivity × elections			-0.142362	
			(0.31)	
				-0.073809
expropriation sensitivity ×elections				(0.32)
elections	0.065733	**0.116686**	**0.122205**	**0.095407**
	(0.33)	(0.00)	(0.00)	(0.00)
regression R^2	0.320	0.304	0.324	0.318
number of observations	12,791	12,229	17,588	23,100

Panel B: Party orientation

dependent variable	**LOG R^2**			
country variable	**LEFT PARTY**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × left party	0.137536			
	(0.45)			
foreign trade sensitivity × left party		-0.026821		
		(0.17)		
governance sensitivity × left party			-0.087278	
			(0.47)	
				-0.032101
expropriation sensitivity × left party				(0.62)
left party	0.079640	**0.147662**	**0.127884**	**0.117161**
	(0.20)	(0.00)	(0.00)	(0.00)
regression R^2	0.3212	0.305	0.325	0.321
number of observations	12,521	11,986	17,194	12,521

Panel C: Autocracy

dependent variable	LOG R^2			
country variable	**AUTOCRACY**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × autocracy	**0.071573**			
	(0.00)			
foreign trade sensitivity × autocracy		**0.010513**		
		(0.00)		
governance sensitivity × autocracy			**0.058520**	
			(0.00)	
expropriation sensitivity × autocracy				**0.015194**
				(0.03)
autocracy	-0.015346	0.005588	**0.036618**	**0.026200**
	(0.41)	(0.71)	(0.00)	(0.00)
regression R^2	0.320	0.282	0.322	0.316
number of observations	12,527	11,973	17,258	22,658

Panel D: Predation

dependent variable	LOG R^2			
country variable	**PREDATION**			
industry sensitivity	**labor**	**foreign trade**	**governance**	**expropriation**
labor sensitivity × predation	-0.036713			
	(0.68)			
foreign trade sensitivity × predation		0.007255		
		(0.47)		
governance sensitivity × predation			**0.054288**	
			(0.06)	
expropriation sensitivity ×predation				**0.019670**
				(0.05)
predation	0.044470	**0.075023**	**0.115812**	**0.038859**
	(0.35)	(0.08)	(0.10)	(0.02)
regression R^2	0.317	0.297	0.319	0.311
number of observations	13,933	13,442	19,294	25,417