Sheltering Corporate Assets from Political Extraction

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We hypothesize that firms structure their asset holdings so as to shelter assets from extraction by politicians and bureaucrats. In countries where the threat of political extraction is higher, we hypothesize that firms hold a lower fraction of their assets in liquid form. Consistent with this conjecture, using data representing over 30,000 firms across 109 countries, we find that corporate holdings of liquid assets are negatively correlated with measures of political corruption. Further, annual investment in property, plant, equipment, and inventory plus dividends is positively correlated with measures of political corruption suggesting that owners channel their cash into harder to extract assets. To the extent that the threat of political extraction moves firms away from their otherwise optimal levels of liquid assets, our findings suggest that the threat of political extraction may reduce economic development not only through the direct costs of political payoffs but also because the potential for asset extraction moves firms away from their otherwise optimal asset holdings.

1. Introduction

Governments or, more accurately, politicians and bureaucrats extract resources from firms. That phenomenon is well-recognized and easily documented. The extraction of resources can be in relatively benign and transparent forms

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such as the collection of usage fees or taxes on reported income. It can also be harsh and punitive such as in the nationalization of firms or even entire industries. In between these arguably two extremes lies the gray area of petty harassment and extortion.

Presumably, however, firms and their owners also take steps to avoid or minimize such asset extraction. Indeed, they may structure their asset holdings in ways that make extraction by politicians and bureaucrats difficult or costly. To the extent that owners do organize their firms' asset holdings to minimize political extraction, the impact is most likely to show up in countries in which the threat of extraction is highest. Further, to the extent that the structuring of corporate assets is sensitive to the likelihood of political extraction, it is most likely to show up in the holdings of liquid assets for, as Myers and Rajan (1998: 736) observe, "[a]nonymous, transportable assets, such as cash, bearer bonds, or commodities, are easier to steal than fixed assets . . .."

With these underpinnings in mind, and using a sample of over 30,000 publicly traded firms from 109 countries, this article examines empirically whether corporate holdings of liquid assets are correlated with measures of the likelihood of political extraction across countries. The primary hypothesis is that corporate holdings of cash and marketable securities are negatively correlated with the likelihood of political extraction. Our presumption is that cash and marketable securities are the assets most easily converted to private benefits and, thus, most likely to be the target of political extraction which, in turn, means they are most in need of sheltering. We consider four measures of the likelihood of political extraction.

After controlling for firm-specific characteristics and for countrywide factors identified by prior research as determinants of cash holdings, we find that the ratio of cash plus marketable securities (henceforth cash) to total assets is significantly negatively correlated with each of the measures of the likelihood of political extraction. This relation is robust to whether we conduct the analysis using firms as the unit of observation or whether we aggregate across firms within each country and use the country as the unit of observation. The effect is also economically significant. For example, in the country-level regressions, after controlling for other factors in a multiple regression analysis, an increase in the likelihood of political extraction by 1 standard deviation (SD) (from the mean) results in a reduction in the ratio of cash to total assets that ranges from 11.7% to 20.3%.

These results immediately give rise to the question of what happens to the cash? That is, after controlling for other factors, if cash holdings are lower, the cash must be deployed elsewhere. One possibility is that the funds have been invested in "hard" assets or used to pay higher dividends. To investigate this possibility, we examine the ratio of the annual investment in property, plant, equipment, and inventory plus dividends to sales. We find a positive correlation between this ratio and the various measures of the likelihood of political extraction. Thus, a higher potential for political extraction is associated with a higher level of investment in harder to extract assets or a higher level of payouts to shareholders. This result demonstrates that cash holdings are lower

because firms or, more accurately, their owners have made an affirmative decision to utilize their funds in ways that shelter them, at least in part, from political extraction.

Note that our findings do not mean that, when searching the globe for places to locate their hard asset investments, firms and their owners search for countries in which the likelihood of political extraction is highest. Rather, they imply that, given that a firm is domiciled in a country in which the risk of political extraction is greater, the firm will invest *relatively* more in hard assets (or pay out more to shareholders) than if the firm were located in a country in which the risk of political extraction is lower. In this regard, our work is connected to studies reporting that multinational firms base their decisions regarding the geographic location of their assets and operations, at least in part, on perceived differences in the necessity to pay bribes across countries (Wheeler and Mody 1992; Smarzynska and Wei 2000; Fan et al. 2007). These studies suggest that the potential for political extraction plays a role when owners consider the structure of assets *across* countries. These studies further suggest that the potential for political extraction may retard economic development because firms and their owners are less likely to invest in countries in which political corruption is higher.

Our results suggest that the potential for political extraction also plays a role in the way in which resident owners structure their firms' assets *within* countries. To the extent that asset sheltering of all kinds (including liquid assets) moves firms away from their otherwise optimal asset structure, and to the extent that such deviations retard development, our results suggest that corruption may retard economic development not only because of the direct costs of political payoffs but also because of the indirect costs associated with asset structuring that deviates from the otherwise optimal structure. To be more precise, in politically corrupt countries, firms appear to operate with what is an otherwise less than optimal level of liquid assets. This argument is related to the one developed by Spiller and Savedoff (1999) that, in government-owned enterprises, as opposed to the private companies that we study, management will have an incentive to waste resources by increasing employment beyond an optimal level as a way to hide cash.

Our article relates to two sets of literature—the literature on the effect of political corruption on corporate behavior and the literature on the determinants of corporate holdings of liquid assets. We briefly review these literatures in Section 2. Section 3 describes the data. Section 4 presents the results of regressions of cash against the measures of the likelihood of political extraction. Section 5 presents the results of regressions of annual investment in property, plant, equipment, and inventory plus dividends against the measures of political extraction. Section 6 presents the results of various robustness tests. Section 7 concludes.

2. Prior Studies

The extraction of corporate assets by politicians and government bureaucrats can be classified under the generic rubric of political corruption. The modern

literature on this topic is customarily traced to Rose-Ackerman (1975). From this beginning, the literature has evolved along both theoretical and empirical fronts and has expanded to encompass both micro- and macroeconomic phenomena. The common thread being that the firm is the economic unit analyzed. An incomplete list of contributions to this literature includes Bliss and Di Tella (1997) and Ades and Di Tella (1999) who study the effect of corruption on market structure, Shleifer and Vishny (1994) and Hellman et al. (2003) who examine the interactions among firms and politicians in which firms both react to and help shape the political environment in which they operate, Mauro (1995) and Mo (2001) who examine the link between corruption and economic growth, and Friedman et al. (2000), Johnson et al. (2000), and Choi and Thum (2005) who examine the link between corruption and the size of a country's "underground" economy. Survey papers on these streams of research include Bardhan (1997) and Lambsdorff (2006).

A theoretical antecedent for our study is found in Stulz (2005) who develops a model with three participants: politicians, corporate insiders, and minority outside shareholders. Among other observations and predictions, Stulz posits that:

> Corporate insiders can take actions to reduce the state's proceeds from expropriation . . . In a country with high risk of expropriation, corporate insiders may choose to invest in projects that would be negative net present value projects in a country where the risk of expropriation is trivial just because they reduce the risk of state expropriation [of the firm's assets] (Stulz 2005: 1613).

In Stulz' model, owners have the greatest incentive to structure their firm's asset holdings so as to reduce the likelihood that the "state" will extract them in countries in which the likelihood of extraction is greatest. We borrow from Myers and Rajan (1998) and extrapolate from Stulz' idea. As we noted above, Myers and Rajan (1998) argue that anonymous liquid assets are more vulnerable to extraction because they are more difficult to trace and are easier and less costly to convert to private consumption.

If we accept the premise that owners have an incentive to structure their firm's assets in ways that reduce the likelihood of extraction by politicians and state bureaucrats and if we accept the premise that liquid assets are more likely to be extracted than are hard assets (i.e., property, plant, equipment, and inventory), it follows that owners are likely to reduce their holdings of liquid assets relative to other assets so as to reduce the likelihood of political extraction. This is not to say that government officials and politicians cannot or do not extract illiquid (or "hard") assets. Indeed, in some instances the "state" has nationalized entire industries. Our point is that liquid assets are easier to convert to private consumption than are hard assets. Thus, for example, a bureaucrat would rather have cash than a ton of cotton or would even prefer cash to a new Mercedes. Further, if we assume that the threat of political extraction varies across countries, holding all else constant, it follows that firms will hold

relatively fewer liquid assets in countries where the threat of political extraction is greatest.

The reasoning above leads to the primary hypothesis to be tested: Across countries, corporate holdings of liquid assets will be negatively correlated with the likelihood of extraction by politicians and government bureaucrats.

Implicit within the reasoning leading to this empirical prediction are two further assumptions. The first is that politicians adjust their demands for bribes according to firms' abilities to pay. Logic dictates that they do, but there is also empirical support for this presumption. Using survey data from Uganda, Svensson (2003: 10) concludes that "... the more a firm can pay; ... the more it must pay..."[1]

The second implicit assumption is that there is an optimal level of cash holdings at which firms operate in the absence of political extraction so that, holding all else constant, deviations from that optimum can be attributed to the potential for political extraction. The theoretical literature on optimal cash holdings is usually traced to Miller and Orr (1966) who develop an inventory model of cash management in which the optimal level of cash holdings involves a trade-off between the cost of a cash "stock-out" and the cost of holding noninterest bearing cash.[2] Empirical support for the trade-off models comes from Opler et al. (1999), Dittmar et al. (2003), and Kalcheva and Lins (2007). For our purposes, the importance of the empirical studies is two-fold. First, they provide support for the notion that firms have an optimal level of cash holdings. Second, they guide our choice of firm- and country-level control variables in our regression analysis.

3. Data

Our primary empirical tests are based on cross-sectional regressions for the year 2005 encompassing the 109 countries listed in Table 1. (In Section 6.3, we discuss robustness tests using data for the years 2002–04 and 2006; years with fewer observations than 2005, but with similar results.) Our measure of cash plus marketable securities and other financial statement data, including ownership of shares by the firm's largest shareholder, are from *Orbis*, a database maintained by *Bureau Van Dijk*. We use four indices to proxy for the relative likelihood of political extraction across countries. The first is from Kaufmann et al. (2007). The second and third are from the *International Country Risk Guide* (ICRG) compiled by the *Political Risk Services Group*.[3] The fourth is from Neumann (1994). Our measure of minority shareholder protection is the country's legal origin from La Porta et al. (1999) and from the CIA's *World Factbook*.[4] Our

1. Supporting evidence is presented by Clarke and Xu (2003) for 21 transition economies in Eastern Europe and Central Asia.

2. Extensions to this literature include Eppen and Fama (1968, 1969), Constantinides (1976, 1978), Myers (1977), and Kim et al. (1998).

3. http://www.prsgroup.com

4. https://www.cia.gov/library/publications/the-world-factbook/index.html.

Table 1. Descriptive Statistics

Country	Number of firms	Cash/ Total assets	KKM Corruption	ICRG Corruption	ICRG Investment profile	Neumann Corruption	Country	Number of firms	Cash/ Total Assets	KKM Corruption	ICRG Corruption	ICRG Investment profile	Neumann Corruption
Anguilla	1	0.082	−0.831				Lithuania	40	0.066	0.162	0.211	−0.562	−1.257
Argentina	83	0.077	0.779	0.211	1.430	0.504	Luxembourg	24	0.190	−1.400	−1.711	−1.009	−1.257
Australia	1349	0.275	−1.525	−1.711	−1.009	−1.257	Macedonia	2	0.018	0.789			1.091
Austria	67	0.133	−1.545	−1.711	−1.009	−1.257	Malaysia	867	0.125	0.133	0.275	0.331	−0.083
Bahamas	2	0.020	−0.899	−0.942	−0.786		Malta	4	0.062	−0.629	−0.558	−0.786	
Bahrain	15	0.178	−0.243	0.595	−0.786		Marshall Islands	6	0.064	0.798			
Bangladesh	2	0.037	1.560	0.980	1.243	1.678	Mauritius	10	0.069	0.066			
Barbados	3	0.101	−0.793				Mexico	107	0.089	0.760	0.595	−0.488	0.504
Belgium	144	0.158	−1.034	−0.942	−0.786	−1.257	Morocco	38	0.084	0.480	0.211	0.331	1.091
Belize	1	0.083	0.605				Mozambique	1	0.064	0.962	0.980	0.555	
Bermuda	502	0.217	−0.831				Namibia	1	0.164	0.326	0.980	−0.116	−0.670
Bolivia	12	0.062	1.145	0.595	1.374	1.091	The Netherlands	177	0.126	−1.545	−1.711	−1.009	−1.257
Bosnia and Herzegovina	1	0.012	0.615				The Netherlands Antilles	4	0.239	−0.831			
Botswana	8	0.223	−0.686	−0.173	−0.786		New Zealand	106	0.135	−1.795	−2.096	−1.009	−1.257
Brazil	312	0.087	0.654	0.724	1.001	1.091	Nicaragua	3	0.035	0.972	0.211	0.480	
Bulgaria	134	0.049	0.384	0.595	−0.786	−0.083	Nigeria	13	0.104	1.560	1.108	2.174	1.678
Canada	987	0.231	−1.477	−1.743	−1.009	−1.257	Norway	308	0.204	−1.602	−1.711	−0.786	−1.257
Cayman Islands	369	0.288	−0.831				Oman	92	0.090	−0.291	0.211	−0.786	
Chile	164	0.065	−0.928	−1.327	−0.786	−0.670	Pakistan	155	0.081	1.367	0.980	2.118	1.678
China	1386	0.150	1.030	0.595	1.132	1.091	Panama	6	0.057	0.634	0.595	−0.116	

Continued

Table 1. *Continued*

Colombia	56	0.090	0.586	−0.173	0.480	1.091	Papua New Guinea	6	0.111	1.454	1.364	0.964	
Costa Rica	9	0.081	−0.002	0.467	0.555	−0.083	Paraguay	3	0.035	1.560	1.364	0.555	1.091
Croatia	211	0.021	0.278	0.211	0.108	−0.083	Peru	115	0.069	0.846	0.211	0.778	0.504
Cyprus	2	0.189	−0.301	−0.942	−1.009		Philippines	146	0.129	0.943	0.595	0.220	1.678
Czech Republic	69	0.124	−0.031	0.211	−0.786	−0.083	Poland	193	0.100	0.210	0.499	−0.786	−0.083
Denmark	139	0.183	−1.786	−2.096	−0.786	−1.257	Portugal	70	0.062	−0.735	−0.942	−1.009	−1.257
Ecuador	21	0.118	1.145	−0.173	1.895	−0.083	Qatar	16	0.218	−0.417	0.211	−0.116	
Egypt	471	0.119	0.798	0.980	1.448	1.091	Romania	61	0.052	0.605	0.211	0.331	0.504
El Salvador	4	0.116	0.712	0.211	0.778		Russian Federation	678	0.044	1.126	0.595	0.331	1.091
Estonia	18	0.108	−0.474	−0.173	−0.116	−0.670	Saudi Arabia	67	0.131	0.143	0.595	−0.562	1.091
Finland	135	0.151	−1.950	−2.480	−1.009	−1.257	Singapore	537	0.187	−1.795	−1.327	−1.009	−1.257
France	800	0.155	−0.976	−0.558	−1.009	−1.257	Slovakia	134	0.086	−0.041	0.211	−0.730	−0.083
Gabon	1	0.092	1.010	1.364	0.741	0.504	Slovenia	7	0.053	−0.436	−0.173	−0.562	−0.670
Germany	678	0.170	−1.477	−1.359	−1.009	−1.257	South Africa	194	0.148	−0.166	0.467	−0.562	−1.257
Greece	251	0.063	−0.012	0.083	−0.264	0.504	Spain	183	0.124	−0.918	−0.942	−1.009	0.504
Guatemala	2	0.069	1.155	0.980	−0.116		Sri Lanka	67	0.075	0.663	0.211	1.039	
Hong Kong	116	0.190	−1.255	−0.942	−1.009	−1.257	Sudan	1	0.147	1.714	1.364	1.001	
Hungary	29	0.083	−0.204	−0.173	−0.823	0.504	Sweden	446	0.193	−1.651	−1.711	−1.009	−1.257
Iceland	29	0.052	−2.036	−2.096	−0.562		Switzerland	180	0.161	−1.680	−1.327	−0.991	−1.257
India	1237	0.077	0.692	0.211	0.182	1.091	Taiwan	1381	0.155	−0.243	−0.173	−0.786	0.504
Indonesia	239	0.092	1.213	1.364	1.337	1.678	Thailand	377	0.098	0.586	0.980	0.555	1.678
Ireland	71	0.240	−1.255	−0.686	−1.009	−1.257	Trinidad and Tobago	7	0.096	0.355	0.595	-0.786	
Israel	133	0.312	−0.368	−0.173	−0.116	−0.670	Tunisia	20	0.090	0.345	0.595	0.592	-0.083
Italy	251	0.113	−0.021	0.211	−1.009	0.504	Turkey	55	0.115	0.422	0.211	0.778	-0.083

Continued

Table 1. *Continued*

Jamaica	21	0.146	0.827	0.980	0.313		Ukraine	25	0.058	0.972	0.820	0.908	-0.083
Japan	3654	0.175	−0.831	−0.558	−0.786	−1.257	United Arab Emirates	36	0.238	−0.706	0.595	-0.786	1.091
Jordan	104	0.102	0.056	−0.173	−0.041	−0.083	United Kingdom	1937	0.213	−1.496	−1.327	-1.009	-1.257
Kazakhstan	1	0.022	1.280	0.980	0.704	−0.083	United States	5182	0.239	−1.140	−1.711	-0.860	-1.257
Kenya	8	0.147	1.338	1.396	0.108	0.504	Uruguay	2	0.011	−0.417	−0.173	0.071	-0.083
Korea (Rep.)	1465	0.104	−0.079	0.211	−0.153	0.504	Venezuela	22	0.127	1.348	0.980	2.733	1.091
Kuwait	32	0.255	−0.426	0.211	−0.786	0.504	Vietnam	102	0.111	1.107	0.980	0.555	
Latvia	34	0.102	0.017	0.595	−0.562	−0.083	Virgin Islands	14	0.334	−0.378			
Lebanon	1	0.079	0.740	1.364	0.480		Zambia	2	0.062	1.155	−0.173	1.430	1.091
Liberia	2	0.115	1.454	0.595	2.118	1.091	Zimbabwe	2	0.168	1.608	2.133	3.682	0.504
Liechtenstein	1	0.281	−0.831										

This table gives descriptive statistics as of 2005, by country, for all nonfinancial publicly traded companies with cash, marketable securities, and total assets data available in *Orbis* from countries for which at least one corruption variable is available. Cash/Total assets is the ratio of cash plus marketable securities to total assets. The four corruption variables are KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption. KKM Corruption measures "... the extent to which public power is exercised for private gain ..." (Kaufmann et al., 2007). ICRG Corruption is "... an assessment of corruption within the political system." ICRG Investment profile is "... an assessment of factors affecting the risk to investment" (ICRG compiled by the *Political Risk Services Group*). Neumann Corruption, developed by Neumann (1994), measures the frequency with which side payments to government officials are expected in order to do business in a given country. Higher values of the corruption variables denote a greater likelihood of political extraction. The corruption variables are standardized so to have a mean of zero and an SD of 1.

measure of private credit is from Djankov et al. (2007), the International Monetary Fund's (IMF) *International Financial Statistics*, and Levine et al. (2000).

To be included in our analysis, a firm must be a nonfinancial publicly traded company with available cash, marketable securities, and total assets data in *Orbis*, and at least one of the four proxies for the likelihood of political extraction must be available for its home country. Each country listed in Table 1 has at least one firm that meets these criteria and every firm that meets these criteria is included in the sample.

Our primary dependent variable is the ratio of cash plus marketable securities (i.e., cash) to total assets. Our primary independent variable is the likelihood of political extraction. To capture this likelihood, we use four indices.

The first index, which we label "KKM Corruption," is:

> . . . [T]he extent to which public power is exercised for private gain, including both petty and grand forms of corruption . . . (Kaufmann et al., 2007: 4).

This measure, developed by Kaufmann et al. (2007), is compiled from several data sources including nongovernmental organizations, commercial business providers, surveys, and expert assessments. Data from those sources are aggregated into a combined indicator as a weighted average of the underlying data. Relative to our other indices, this measure has several virtues: (1) it is available for the largest set of countries, 109; (2) to the extent that the data sources used to compile the index are independent, it is likely to have smaller measurement error; and (3) it is updated annually. The shortcomings are that (1) it is a relatively new index and, as such, it has not yet been validated by use in other studies and (2) the respondents/experts are not from a common pool.

The second index, which we label "ICRG Corruption," is:

> . . . [A]n assessment of corruption within the political system. . . . The most common form of corruption met directly by business is financial corruption in the form of demands for special payments and bribes . . .[5]

The third index, which we label "ICRG Investment profile," is:

> . . . [A]n assessment of factors affecting the risk to investment that are not covered by other political, economic and financial risk components . . .. The subcomponents are: Contract Viability/Expropriation; Profits Repatriation; Payment Delays.[6]

The second and third indices are constructed based on the opinion of global experts and analysts. The virtues of these indices are that (1) they measure

5. http://www.prsgroup.com/ICRG_Methodology.aspx.
6. http://www.prsgroup.com/ICRG_Methodology.aspx.

distinct aspects of the likelihood of political extraction and are both developed by the *Political Risk Services Group*; (2) they are updated annually; (3) they have been widely used in prior studies; and (4) they are available for a large set of countries, 97. Their shortcomings are that (1) the experts providing the assessments are not from a common pool and (2) the procedure used to compile the indices is less transparent than that of the other indices.

The fourth index, which we label "Neumann Corruption," was developed by Neumann (1994) and is constructed from interviews with German business people whose businesses involve exporting to foreign countries. In spirit, the index attempts to measure the frequency with which side payments to government officials are expected in order to do business in a given country. Relative to the other indices, the virtues of this index are (1) the respondents are from a common pool and (2) at the time the index was compiled, bribery of foreign officials was legal in Germany and, thus, the people interviewed had no particular motive to conceal their payments. The shortcomings of this index are (1) it is available only for 1994 and (2) it is available for fewer countries than the others, 78.

In their raw form, three of the measures of the likelihood of political extraction (KKM Corruption, ICRG Corruption, ICRG Investment profile) are scaled so that higher values denote a lower likelihood of political extraction. We invert the original scaling of these so that higher values denote a greater likelihood of political extraction. In the discussions that follow, we refer to the four indices collectively as the "corruption indices."

We also include the following control variables that previous articles have found to be significant in tests of the trade-off theory of cash holdings (Opler et al. 1999; Dittmar et al. 2003; and Kalcheva and Lins 2007). Sales growth ("Sales growth") is measured as the change in sales between year $t-1$ and year t over sales in year $t-1$. The ratio of debt to total assets ("Debt/Total assets") is measured as the sum of long- and short-term debt at the end of year t divided by total assets at the end of year t. The ratio of cash flow to total assets ("Cash flow/Total assets") is the sum of the earnings after tax plus depreciation in year t divided by total assets at the end of year t. The ratio of change in net working capital over total assets ("Delta NWC/Total assets") is the change in accounts receivable between year $t-1$ and year t minus the change in accounts payable between year $t-1$ and year t divided by total assets at the end of year t.

The ratio of investments to total assets ("Investments/Total assets") is net capital expenditures in year t plus the change in the inventory between year $t-1$ and year t plus dividends paid during year t divided by total assets at the end of year t.[7] We combine expenditures on "hard assets" with dividends because as we later propose, these are equivalent ways of sheltering assets from political extraction. Size, "Ln(Total assets)," is the natural

7. We estimate this variable as $[-\text{Cash}_{(t)} + \text{Cash}_{(t-1)} + \text{Cash flow}_{(t)} + \text{Debt}_{(t)} - \text{Debt}_{(t-1)} - \text{noncash operating net working capital}_{(t)} + \text{noncash operating net working capital}_{(t-1)} + \text{Inventory}_{(t)} - \text{Inventory}_{(t-1)}]/\text{Total assets}_{(t)}$.

log of total assets at the end of year t measured in millions of US dollars. "Largest shareholder" is the fraction of shares owned by the largest shareholder. "UK legal origin" is an indicator variable to identify whether the legal origin of the country in which the firm is headquartered is common law. Finally, the ratio of private credit to GDP ("Private credit/GDP") is the amount of credit provided to nongovernment owned entities by banks and other financial institutions divided by GDP.[8] To limit the effect of data errors, all accounting variables are winsorized at the top and bottom 1% of the observations.

Table 1 lists the countries for which we have data on Cash/Total assets and at least one of the corruption variables. It also gives the number of firms for each country in our initial regression (these range from one firm in 10 countries to 5182 firms in the United States) along with the average of the ratios of cash to total assets for all firms in a country (which range from 0.011 in Uruguay to 0.334 in the Virgin Islands).

In our regressions, the corruption indices and other variables are standardized to facilitate economic interpretation of the coefficients.[9] Table 1 gives the standardized corruption indices for each country for the year 2005. As might be expected, the indices are highly correlated with pairwise correlation coefficients that range from 0.66 to 0.90.

4. Cash Holdings and the Likelihood of Political Extraction

4.1 Overview

We use ordinary least squares regressions to test our hypothesis. Tables 2 and 3 present our primary results. In Table 2, the firm is the unit of analysis. In Table 3, the firm-level data are aggregated for each country so that the country is the unit of observation. For each regression, the standard errors (SEs) (shown below the estimated coefficients) are corrected for heteroskedasticity. In the firm-level regressions of Table 2, the SEs are adjusted for bidirectional clustering at the three-digit industry and country levels. Thus, in our tests, we relax the assumption that the residuals are independent and identically distributed. More precisely, by clustering the SEs, we account for the dependence in the data. As our proxies for the likelihood of political extraction are measured at the country level, a possible concern is that residuals might be correlated across firms in a given country. This might happen as higher corruption in a given country may induce all firms in that country to reduce their holdings of liquid assets. Further, due to business similarities, residuals might be

8. If this variable is available in Levine et al. (2000) or Djankov et al. (2007), we use that estimate; if not we calculate the variable, using IMF data, as the ratio of credit from deposit taking financial institutions to the private sector relative to GDP.

9. Legal origin is a binary variable and, therefore, it is not standardized.

Table 2. Cash Holdings and the Potential for Political Extraction: Firm-Level Regression Results with 2005 Data

	Panel A			
	(1)	(2)	(3)	(4)
KKM Corruption	−0.031			
	(0.008)***			
ICRG Corruption		−0.032		
		(0.009)***		
ICRG Investment profile			−0.022	
			(0.008)***	
Neumann Corruption				−0.032
				(0.008)***
Number of observations	30,069	29,155	29,155	28,768
Number of country clusters	109	97	97	78
Number of industry clusters	362	362	362	361
Adjusted R^2	0.176	0.182	0.171	0.182
	Panel B			
	(1)	(2)	(3)	(4)
KKM Corruption	−0.009			
	(0.005)*			
ICRG Corruption		−0.013		
		(0.006)**		
ICRG Investment profile			−0.008	
			(0.005)*	
Neumann Corruption				−0.012
				(0.005)**
Sales growth	0.007	0.007	0.007	0.008
	(0.003)**	(0.003)**	(0.003)**	(0.003)**
Debt/Total assets	−0.038	−0.038	−0.038	−0.038
	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Cash flow/Total assets	0.017	0.017	0.017	0.017
	(0.012)	(0.012)	(0.012)	(0.012)
Delta NWC/Total assets	−0.024	−0.024	−0.024	−0.024
	(0.002)***	(0.002)***	(0.002)***	(0.002)***
Investments/Total assets	−0.050	−0.050	−0.050	−0.050
	(0.004)***	(0.004)***	(0.004)***	(0.004)***
Ln (Total assets)	−0.009	−0.010	−0.010	−0.010
	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Ownership concentration	−0.007	−0.008	−0.007	−0.007
	(0.003)**	(0.003)**	(0.003)**	(0.003)***
UK legal origin	0.011	0.007	0.013	0.011
	(0.012)	(0.010)	(0.012)	(0.010)
Private credit/GDP	0.016	0.014	0.017	0.014
	(0.002)***	(0.002)***	(0.003)***	(0.002)***
Number of observations	17,409	17,408	17,408	17,288
Number of country clusters	80	79	79	69
Number of industry clusters	340	340	340	339
Adjusted R^2	0.279	0.295	0.279	0.281

This table presents ordinary least squares regressions in which the dependent variable is the ratio of cash to total assets. The firm is the unit of observation. All accounting variables are winsorized at the top/bottom 1%. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. All regressions include three-digit Standard Industrial Code industry indicators. Continuous independent variables are standardized. Standard errors, reported in parentheses below the coefficients, are adjusted for bidirectional clustering at the country and at the industry level. ***, **, and * denote significance at the 1%, 5%, and 10%, respectively.

Table 3. Cash Holdings and the Potential for Political Extraction: Country-Level Regression Results with 2005 Data

	Panel A			
	(1)	(2)	(3)	(4)
KKM Corruption	−0.034 (0.006)***			
ICRG Corruption		−0.022 (0.006)***		
ICRG Investment profile			−0.021 (0.007)***	
Neumann Corruption				−0.029 (0.006)***
Intercept	0.120 (0.006)***	0.118 (0.006)***	0.118 (0.006)***	0.121 (0.006)***
Number of observations	109	97	97	78
Adjusted R^2	0.244	0.136	0.110	0.219
	Panel B			
	(1)	(2)	(3)	(4)
KKM Corruption	−0.026 (0.006)***			
ICRG Corruption		−0.018 (0.005)***		
ICRG Investment profile			−0.015 (0.006)**	
Neumann Corruption				−0.018 (0.006)***
Sales growth	0.015 (0.007)*	0.012 (0.008)	0.016 (0.008)**	0.020 (0.008)**
Debt/Total assets	−0.023 (0.005)***	−0.023 (0.005)***	−0.020 (0.005)***	−0.018 (0.007)***
Cash flow/Total assets	−0.001 (0.006)	−0.002 (0.009)	−0.005 (0.008)	−0.002 (0.010)
Delta NWC/Total assets	0.008 (0.008)	0.010 (0.009)	0.012 (0.009)	−0.011 (0.018)
Investments/Total assets	−0.012 (0.005)**	−0.011 (0.006)*	−0.010 (0.006)*	−0.013 (0.011)
Ln (Total assets)	0.015 (0.005)***	0.014 (0.006)**	0.015 (0.006)**	0.012 (0.006)*
Ownership concentration	−0.006 (0.006)	−0.006 (0.006)	−0.003 (0.006)	−0.010 (0.007)
UK legal origin	0.038 (0.011)***	0.039 (0.012)***	0.034 (0.012)***	0.028 (0.016)*
Private credit/GDP	0.003 (0.006)	0.010 (0.006)	0.013 (0.006)**	0.011 (0.006)*
Intercept	0.109 (0.005)***	0.110 (0.006)***	0.110 (0.006)***	0.116 (0.008)***
Number of observations	83	81	81	69
Adjusted R^2	0.624	0.569	0.559	0.612

This table presents ordinary least squares regressions in which the dependent variable is the ratio of cash to total assets. Firm-level data are averaged for each country so that the country average is the unit of observation. All accounting variables are winsorized at the top/bottom 1%. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. Continuous independent variables are standardized. SEs, reported in parentheses below the coefficients, are adjusted for heteroskedasticity. ***, **, and * denote significance at the 1%, 5%, and 10%, respectively.

correlated across firms in a given industry. By double-clustering the SEs, we allow both types of dependence in the data.

In each regression, the dependent variable is the ratio of cash to total assets. Interpretation of the coefficients of the standardized variables is as follows: An increase or decrease of 1.0 in the standardized independent variable represents the effect of a 1 SD change in the raw independent variable on the dependent variable.

4.2 Firm-Level Regressions

To begin, we focus on the firm-level regressions in Table 2. The regressions in panel A include only the corruption indices along with three-digit Standard Industrial Code industry indicators as independent variables. As we move across the table, we move from the index that is available for the most countries to the index that is available for the fewest. The sign of the coefficient of each of the corruption indices is negative and statistically significant with a p value of less than 0.01. These results are consistent with our prediction that firms structure their asset holdings so as to shelter liquid assets from political extraction.

The regressions in panel B parallel those in panel A, except that we now include the variables described above to control for the trade-off theory of cash holdings. Because we do not have observations on the control variables for every firm, as we move from panel A to panel B, the number of firms in the regressions declines. For example, in the first regression, the number of firms declines from 30,069 (in panel A) to 17,409 (in panel B).

Consistent with our hypothesis, the coefficient of each of the corruption indices is negative; two of the indices are significant at the 0.05 level and two at the 0.10 level. To put the coefficients of the indices into economic perspective, based on the multiple regressions, and depending upon the corruption index used, a 1 SD increase in the corruption index corresponds to a decline in the ratio of cash to total assets that ranges from 4.7% to 7.6%. Thus, assuming that the trade-off theory and its empirical proxies reasonably control for operational factors that influence corporate cash holdings, the likelihood of political extraction is statistically and economically significant in explaining corporate holdings of liquid assets. The results are consistent with the prediction that owners structure their firm's asset holdings so as to shelter assets from political extraction.

4.3 Country-Level Regressions

We now turn to the country-level regressions in Table 3. The regressions in Table 3 parallel those in Table 2 except that the firm-level data are aggregated across all firms in each country so that we have one observation per country. This observation is the average of each variable across all firms in a given country. We estimate the country-level regressions because the number of

firms is not constant across countries such that the estimated coefficients could be largely determined by a few countries with the largest number of firms.

As shown in panel A of Table 3, the coefficient of each of the corruption indices is negative and each coefficient has a p value of 0.01 or less. As in Table 2, when the control variables are included (panel B), the coefficient of each of the corruption indices continues to be negative (with p values of 0.02 or less). Interestingly, the implied economic significance of the likelihood of political extraction in the country-level regressions is larger than in the firm-level regressions. Depending upon the index employed, in the country level regressions, a 1 SD increase in the index corresponds to a decline in the ratio of cash to total assets that ranges from 11.7% to 20.3%.

5. Investments in Hard Assets and Dividend Payouts

In sum, the results are consistent with the hypothesis that firms and their owners respond to the risk of political extraction by sheltering their assets more in countries in which that risk is higher. More specifically, our tests show that firms hold less cash as a fraction of total assets in countries in which the threat of political extraction is higher. Those results give rise to the question of what happens to the cash? Logically, the cash is either invested in hard assets or paid out to shareholders.

If the mechanism for sheltering cash is to invest in hard assets or to return capital to shareholders, we would expect to see an increase in investments in property, plant, equipment, and inventory plus dividends as the likelihood of political extraction increases. (Henceforth, we use "investments" as shorthand for the sum of annual investment in property, plant, equipment, and inventory plus dividends. We use this shorthand, in part, because many firms do not pay dividends and, in those firms that do pay dividends, dividends comprise a small fraction of the total "investments".) To examine this prediction, we estimate firm-level ordinary least square regressions in which the dependent variable is the ratio of investments to sales. The independent variables are one of the corruption indices along with the control variables used in the regressions above. The dependent variable is calculated as investment during 2006 divided by sales during 2006. The independent variables are from 2005.

The results are presented in Table 4. The coefficient of each of the corruption indices is positive with a p value of less than 0.01. These results indicate that firms in countries with a higher threat of political extraction invest relatively more in property, plant, equipment and inventory or pay out more to shareholders than do firms in countries with a lower threat of political extraction. Note, of course, that this does not mean that firms invest *more* in more corrupt countries. It only means that, given that a firm is established in a more corrupt country, the firm will invest *relatively* more in hard assets than if the firm were established in a less corrupt country. Thus, the answer to the question posed at the outset of this section as to where the cash goes is that, at least in part, it is used to make investments in assets that are harder to extract or paid out to shareholders. This result is consistent with the

Table 4. Investments and the Potential for Political Extraction: Firm-Level Regression Results

	(1)	(2)	(3)	(4)
KKM Corruption	0.103			
	(0.036)***			
ICRG Corruption		0.133		
		(0.039)***		
ICRG Investment profile			0.105	
			(0.036)***	
Neumann Corruption				0.112
				(0.040)***
Sales growth	−0.011	−0.009	−0.013	−0.011
	(0.056)	(0.057)	(0.056)	(0.057)
Debt/Total assets	0.079	0.084	0.081	0.087
	(0.032)**	(0.033)***	(0.032)**	(0.031)***
Cash flow/Total assets	0.934	0.929	0.933	0.933
	(0.234)***	(0.233)***	(0.233)***	(0.234)***
Delta NWC/Total assets	−0.070	−0.071	−0.069	−0.073
	(0.030)**	(0.030)**	(0.030)**	(0.029)**
Ln (Total assets)	0.102	0.110	0.105	0.101
	(0.032)***	(0.030)***	(0.031)***	(0.030)***
Ownership concentration	0.037	0.039	0.032	0.039
	(0.015)**	(0.015)***	(0.016)**	(0.017)**
UK legal origin	−0.142	−0.106	−0.151	−0.140
	(0.061)**	(0.055)*	(0.059)***	(0.062)**
Private credit/GDP	0.054	0.075	0.040	0.068
	(0.022)**	(0.027)**	(0.020)**	(0.024)***
Number of observations	12,151	12,150	12,150	12,054
Number of country clusters	71	70	70	63
Number of industry clusters	333	333	333	333
Adjusted R^2	0.193	0.194	0.193	0.194

This table presents ordinary least squares regressions in which the dependent variable is the ratio of (Net capital expenditures ± Change in inventory + Dividends)$_{t+1}$/Sales$_{t+1}$. The firm is the unit of observation. All accounting variables are winsorized at the top/bottom 1%. All regressions include three-digit Standard Industrial Code industry indicators. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. Continuous independent variables are standardized. SEs, reported in parentheses below the coefficients, are adjusted for bidirectional clustering at the country and at the industry level. ***, **, and * denote significance at the 1%, 5%, and 10%, respectively.

prediction that firms and their owners structure assets to shelter them from political extraction.

6. Robustness Tests

6.1 Business Groups and Sheltering Cash

Our analysis presumes that the financial statements of firms report all available cash. That would seem to be a reasonable presumption given that all of the firms in the sample are publicly traded (i.e., all are "listed") and all have audited financial statements. It is possible, however, that some controlling shareholders of listed firms shelter liquid assets from political extraction by hoarding cash in unlisted firms that they also control with the idea that the cash can be made available to their listed firms in an emergency. To consider this possibility, we construct an indicator variable, "Business group," that

Table 5. Robustness Tests: Cash Holdings and the Potential for Political Extraction

	(1)	(2)	(3)
Business group (20%)	−0.001		
	(0.007)		
Business group (10%)		−0.015	
		(0.008)*	
Corporate income taxes			0.007
			(0.005)
KKM Corruption	−0.009	−0.010	−0.010
	(0.004)**	(0.005)**	(0.005)*
Sales growth	0.007	0.008	0.008
	(0.003)**	(0.003)**	(0.003)**
Debt/Total assets	−0.038	−0.038	−0.038
	(0.003)***	(0.003)***	(0.003)***
Cash flow/Total assets	0.017	0.017	0.014
	(0.012)	(0.012)	(0.012)
Delta NWC/Total assets	−0.024	−0.024	−0.024
	(0.002)***	(0.002)***	(0.002)***
Investments/Total assets	−0.050	−0.050	−0.051
	(0.004)***	(0.004)***	(0.004)***
Ln (Total assets)	−0.009	−0.007	−0.009
	(0.003)***	(0.003)**	(0.003)***
Ownership concentration	−0.007	−0.007	−0.007
	(0.003)	(0.003)	(0.003)
UK legal origin	0.011	0.010	0.010
	(0.012)	(0.011)	(0.012)
Private credit/GDP	0.016	0.017	0.014
	(0.002)***	(0.003)***	(0.002)***
Number of observations	17,409	17,409	16,284
Number of country clusters	80	80	73
Number of industry clusters	340	340	339
Adjusted R^2	0.279	0.280	0.285

This table presents ordinary least squares regressions in which the dependent variable is the ratio of cash to total assets. The firm is the unit of observation. All accounting variables are winsorized at the top/bottom 1%. Higher values of KKM Corruption denote a greater likelihood of political extraction. Continuous independent variables are standardized. SEs, reported in parentheses below the coefficients, are adjusted for bidirectional clustering at the country and at the industry level. ***, **, and * denote significance at the 1%, 5%, and 10%, respectively.

denotes whether a given listed firm is controlled by a shareholder who controls another unlisted company. To construct this variable, as in Claessens et al. (2000), we trace the ownership of each listed and unlisted firm in *Orbis* to its largest ultimate shareholder. For each listed firm for which the ultimate shareholder controls at least 20% (10%) of the shares, we search to determine whether that shareholder controls at least 20% (10%) of the shares of an unlisted firm.

We then re-estimate the regressions in panel B of Tables 2 and 3 including the indicator variable Business group. The results of representative regressions using KKM Corruption as the corruption index and using, respectively, Business groups based on 20% and, then, 10% control are given in the first and second columns of Table 5. In each regression, the coefficient of the corruption index is negative with a p value of less than 0.05. Likewise in each of the regressions not reported in the table, the coefficient of the corruption variable

is negative with a p value of less than 0.10.[10] These results indicate that even after controlling for whether listed firms are part of a Business group, the firms hold less cash in more corrupt countries. Further, the coefficients of the Business group indicator are both negative, but only one is statistically significantly different from zero (p values = 0.89 and 0.06). In the regressions not reported in the table, the coefficients of Business group are sometimes negative and sometimes positive and often not significantly different from zero. These results suggest that controlling shareholders of publicly traded firms do not hoard cash in their unlisted firms so as to be able to make it available to their listed firms in an emergency.

There is a related point that requires noting. Although we have controlled for the quality of shareholder rights (using legal origin as a proxy), ownership concentration (to control for the incentives for controlling shareholders to extract assets), and Business group affiliation, we cannot completely rule out the possibility that the negative correlation between cash and our measures of political corruption arises because of diversion of cash by insiders. That is, despite our efforts to control for cross-country differences in shareholder rights and for firm-specific factors, it could be that in more corrupt countries, liquid assets are held at a less than optimal level because the cash has been diverted by corporate insiders.

6.2 Tax Havens

Hines and Hubbard (1990) and Desai et al. (2001, 2007) report that dividend payouts by affiliates of US multinationals are lower when the affiliates are domiciled in low tax countries. If that is true and if the dividends that could have been paid are instead held as cash in unconsolidated subsidiaries, then the cash balances of parents located in high tax countries could be lower than those of parents located in low tax countries. Further, if high tax countries are also low corruption countries, then the negative correlations between cash holdings and our corruption indices arise not because the parents are sheltering assets from political extraction, but because the parents are sheltering *income* from taxation (and the income is invested in cash as opposed to hard assets).

As a test of that possibility, we reestimate the regressions in panel B of Tables 2 and 3 including the corporate income tax rate in the country of each firm in our sample as an additional control variable.[11] The results using KKM Corruption as the corruption index are given in the third column of Table 5. Contrary to the tax prediction, we find that cash holdings are higher among firms domiciled in high tax countries (albeit the correlation between cash and the country-level tax rate is not statistically significant). Further, as shown in Table 5, after controlling for corporate tax rates, we continue to find a negative and significant correlation between cash and KKM Corruption (p value = 0.05). Likewise, in regressions using the other corruption indices and in those using country-level data (not

10. All unreported regressions that are discussed in the text are available at http://www.krannert.purdue.edu/faculty/mfaccio/home.asp.

11. The tax rates are from the World Bank (http://sima-ext.worldbank.org/query/).

shown in a table), the coefficients of the corruption indices are all negative with each having a p value of less than 0.10.

A more comprehensive test of the tax prediction would require data identifying whether each of the firms in our sample has an unconsolidated affiliate in a tax haven. Because such data are not available to us, we cannot conduct such a test and, therefore, we cannot completely rule out the possibility that our results are due to tax avoidance by parent firms domiciled in low corruption, high tax countries that have unconsolidated affiliates in tax havens.

6.3 Other Years

Our results are based on cross-sectional regressions with data for the year 2005. The virtue of 2005 relative to the other years for which we have data is a larger number of observations. Nevertheless, we also estimate each of the regressions in Tables 2 and 3 using data for the years 2002–04 and for 2006. This estimation gives rise to 64 regressions. In each of the regressions (not reported in a table), the coefficient of the relevant corruption index is negative and in 46 of the regressions the p value is less than 0.10. Thus, the negative correlation between corporate cash holdings and the likelihood of political extraction is not unique to 2005.

6.4 Measurement of Corporate Assets

The dependent variable in our regressions is the ratio of cash plus marketable securities to total assets. In some countries, equity ownership in subsidiaries is reported at historical cost and in others it can be marked to market. If, systematically, accounting rules in countries in which corruption is low allow equity ownership in subsidiaries to be marked to market and if market values are systematically lower than historical cost, we would find a negative correlation between cash and corruption that stems from mismeasurement of our dependent variable rather than reflecting sheltering of liquid assets from political extraction.

To address this possibility, we reestimate the regressions in panel B of Tables 2 and 3 using the ratio of cash to property, plant, and equipment as the dependent variable. In each of these regressions (not reported in a table), the coefficient of the corruption index is negative with seven of the eight having a p value of 0.10 or less. Additionally, the coefficients of the corruption indices are larger in economic magnitude than the corresponding coefficients of the regression in which the denominator of the dependent variable is total assets. These results indicate that the negative correlation between cash and corruption indices does not stem from differences in the reporting of equity ownership in subsidiaries.

6.5 Reverse Causality

A concern that can arise in cross-sectional analyses of the type conducted herein is that of reverse causality in which the apparent dependent variable

is actually "causing" the independent variable to occur. That possibility seems to be remote in the question explored here in that it is unlikely that low levels of corporate cash holdings would induce greater political corruption.

6.6 Asset Bubbles and Cheap Credit

Some economists have argued that the early 2000s were years of "asset bubbles" resulting, at least in part, from the availability of "cheap credit" and that this phenomenon was especially evident in the United States and the United Kingdom. If so, it is possible that, during the period of 2002–06, firms in the United States and United Kingdom built up cash holdings for reasons having nothing to do with corruption or the lack thereof, but rather having to do with the availability of cheap debt. If that were the case, the negative relation between corporate cash holdings and our measures of corruption would be capturing the availability of cheap credit rather than the propensity of firms in corrupt countries to shelter assets.

To investigate whether our results are due to such a chain of causation, we omit the United States and United Kingdom from our sample and reestimate the regressions of panel B of Tables 2 and 3. The coefficients of each of the corruption variables (not shown in a table) continue to be negative with seven of the eight coefficients having a p value of less than 0.05. A thorough consideration of this question would require data outside of the period 2002–06—data that we do not have. As more time series data become available, that question will become amenable to investigation.

6.7 The Entry Decision

We take as given the industries in which firms operate. However, entrepreneurs have a choice over which industries to enter. An alternative argument to ours is that entrepreneurs in more corrupt countries choose to enter industries that require fewer liquid assets. Under this argument, the documented negative correlation between corporate cash holdings and our corruption indices is due to industry choice by entrepreneurs rather than by the decision to shelter assets from political extraction. To examine this possible explanation for the observed negative correlation between corporate cash holdings and corruption, we investigate whether the propensity to operate in a "cash-intensive" industry is lower when corruption is high.

To conduct this investigation, we identify the most cash-intensive industries in the countries with the lowest KKM Corruption. Specifically, we identify the 10% of industries with the highest ratio of cash to total assets in the 12 countries with the lowest KKM Corruption. The presumption underlying our analysis is that, in these 12 countries, the entry decision is not influenced by the threat of political extraction. If that presumption is correct, these countries serve as a benchmark of the propensity for entrepreneurs to choose to operate in those cash-intensive industries. If corruption has an effect on industry

choice, we should observe that the propensity to operate in those cash-intensive industries is lower when corruption is higher.

With these premises in mind, for each country in our sample, we compute the fraction of firms in the cash-intensive industries relative to the population of publicly traded firms in that country. We then calculate the correlation between KKM Corruption and the fraction of firms in the cash-intensive industries. This coefficient is −0.04 with a p value of 0.70. This result suggests that industry choice is not a major determinant of the negative relation between cash holdings and corruption that we find.

7. Conclusions

It is frequently asserted in international management and economics texts that multinational firms base their asset locations, in part, on the relative risks of state expropriation of corporate assets with the proviso that the location of certain types of assets may be easier to control than others. Consider the following:

> The natural location of different stages of production may be resource-oriented, footloose, or market-oriented. Oil, for instance, is drilled in and around the Persian Gulf, Venezuela, and Indonesia. No choice exists for where this activity takes place. Refining is footloose; a refining facility can easily be moved to another location or country. Whenever possible, oil companies have built refineries in politically safe countries ... (Eiteman et al., 2001: 399–400).

Building upon Stulz (2005), we argue that the same principles apply to allocation among different kinds of assets within countries except that owners will exercise control over the type of assets in which to invest based upon the likelihood of political extraction of their firms' assets. In particular, given that liquid assets are easier to extract than are hard assets such as property, plant, equipment and inventory, we hypothesize that owners hold a lower fraction of their firms' assets in cash in countries where the likelihood of political extraction is higher.

We test this hypothesis with data on publicly traded firms from 109 countries. To conduct the tests, we estimate regressions using the ratio of cash to total assets as the dependent variable and alternatively using four different measures of the likelihood of political extraction (which we label the corruption variables) as the key independent variable along with control variables found to be significant in explaining corporate cash holdings in prior studies. Consistent with our prediction, in each of the regressions, the coefficient of the corruption variable is negative and statistically significant.

We also address the question of where does the cash go? We find that firms located in countries where the likelihood of political extraction is higher invest more in harder to extract assets or pay higher dividends. This result suggests that cash holdings are lower because firms and their owners have made

a deliberate choice to alter the structure of their asset holdings in the face of the potential for political extraction. To the extent that this choice pushes firms away from an optimal use of resources, the implication is that firms end up operating relatively less efficiently than they would have in the absence of this risk. This observation connects our study to earlier research showing that political corruption is associated with lower rates of national economic growth. In particular, one channel through which political corruption may lead to lower rates of economic growth is by inducing firms to structure their assets differently than they would have and that the alternative structure chosen retards economic development.

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