

Sheltering Corporate Assets from Political Extraction

Lorenzo Caprio
Università Cattolica del Sacro Cuore

Mara Faccio
Purdue University

John J. McConnell
Purdue University

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Abstract

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 domiciled in those countries will hold a lower fraction of their assets in liquid form. Consistent with this conjecture, using firm-level data, we find that, across 109 countries, corporate holdings of liquid assets are negatively correlated with measures of political corruption. Assuming that the threat of political extraction moves firms away from their otherwise optimal levels of cash holdings, our findings suggest that the threat of political extraction may reduce economic development not only through the direct deadweight costs of political payoffs, but also because the potential for asset extraction moves firms away from their otherwise optimal asset holdings.

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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 such as the collection of usage fees or taxes on reported income. It can also be harsh and punitive such as 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 because liquid assets are more vulnerable to extraction. They are more vulnerable because they are less costly to convert to personal consumption and are more difficult to trace than are "hard" assets.

Thus, for example, a bureaucrat would rather have cash than a ton of cotton not because the cotton is not valuable, but because it is less easily converted to personal consumption. This is not to say that government officials and politicians cannot or do not extract illiquid assets, it merely means that liquid assets are a more desirable target for extraction than are hard assets (i.e., property, plant, equipment and inventory) because, all

else equal, liquid assets are fungible and, therefore, easier to convert to a preferred personal consumption pattern.¹

A second, related, point is that extraction of hard assets is easier to detect than is extraction of liquid assets. And, for the bureaucrat, detection can be onerous in that in some countries detection and prosecution can entail significant personal costs.²

We should emphasize that we are not arguing that when a bureaucrat can choose between extracting an oil well with a value of \$1.0 billion and a cash bribe of \$1.0 million, the bureaucrat will choose to extract the cash. We are arguing that when a bureaucrat is choosing between a printing press with a value of \$1.0 million and cash of \$1.0 million, the bureaucrat will choose the cash. That is, we are holding scale constant when the politician or bureaucrat is extracting assets. All else equal, including the value of the asset to be extracted, the bureaucrat will choose the more liquid asset.

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, it follows that owners are likely to reduce their holdings of liquid assets relative to hard assets so as to reduce the likelihood of political extraction.

With this reasoning in mind, and using a sample of over 29,000 publicly traded firms from 109 countries, we investigate whether corporate holdings of liquid assets are correlated with measures of the likelihood of political extraction across countries. The

¹ One objection to our argument could be that hard assets such as plant and equipment can be used to generate a flow of income through time and, thereby, provide a higher level of consumption through time. However, all else equal, liquid assets can also be invested so as to provide a flow of income through time and possibly with less risk in that liquid assets can be used to create a well diversified portfolio of income.

² Including the possibility of death as described in Fan, Rui, and Zhao (2008).

primary hypothesis is that corporate holdings of cash and marketable securities are negatively correlated with the likelihood of political extraction. We consider four measures of the likelihood of political extraction from three independent sources. An implicit assumption in our reasoning is that there is an optimal level of cash holdings at which firms would 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. We, therefore, borrow from the literature on corporate cash management to identify the determinants of the optimal level of corporate cash holdings.

After controlling for firm-specific characteristics and for country-wide factors identified by prior research as determinants of corporate cash holdings, we find that the ratio of cash plus marketable securities (henceforth, cash) to total assets is statistically 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: based on the firm-level analysis, a two standard deviation increase in the likelihood of political extraction from the mean results in a reduction in the ratio of cash-to-total assets that ranges from 10.0% to 16.3%.

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 already been extracted by politicians in the form of bribes extorted. A second possibility is that the funds have been

invested in “hard” assets and/or paid out to the suppliers of capital.³ To investigate the latter possibility, we examine the ratio of the annual investment in property, plant, equipment, and inventory plus payments to capital suppliers divided by sales. We find a positive correlation between this ratio and our 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 and/or a higher level of payments to capital. 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.

This result does not rule out the possibility that a portion of the funds have already been extorted by government officials in some form or fashion. We believe, however, that logic rules out the possibility that the negative correlation between cash holdings and the likelihood of political extraction is due to cash payoffs to politicians.

The logic goes as follows: *ex ante* (i.e., before the extortion has occurred) in countries where the likelihood of political extraction is higher, we should observe higher levels of cash as firms stockpile cash so as to be able to make the political payoffs and still have sufficient cash to be able to operate efficiently afterwards. *Ex post* (i.e., after the payoffs have been made) firms should hold the optimal level of cash for operating purposes, which should be the same across countries regardless of the differences in the likelihood of political extraction. Ergo, *ex ante*, we would observe a positive correlation between the level of cash and the likelihood of political extraction. *Ex post*, we would observe no correlation between the level of cash and the likelihood of political extraction.

³ These payments include interests, dividends, (net) repurchases of equity and (net) repayments of principal.

Both of these predictions are inconsistent with our findings of a negative correlation between the level of cash and the likelihood of political extraction. Thus, logically, the lower levels of cash in countries with higher likelihoods of political extraction cannot be the outcome of the payments to politicians and bureaucrats.

Yet another possibility is that political extraction takes a different route than direct extortion of bribes. The political extraction may come in the form of higher employment (i.e., less efficient use of labor) in regions that support a particular politician or political party (Bertrand, Kramarz, Schoar and Thesmar (2007), Fan and Wong (2007)). Contrary to that prediction, we find that the number of employees per dollar of assets employed is negatively correlated with the measures of the likelihood of political extraction. These results are inconsistent with an argument that firms in countries with a higher likelihood of political extraction overinvest to create jobs.

In sum, we find that cash holdings in publicly traded firms are negatively correlated with various measures of the likelihood of political extraction across countries. We interpret this result to mean that the owners of firms structure their firms' asset holdings so as to reduce the likelihood of political extraction, especially in countries where the risk of such extraction is high.

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 (and/or pay out more to shareholders and debt holders) 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 (Fan, Morck, Xu and Yeung (2007), Smarzynska and Wei (2000), Wheeler and Mody (1992)). 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 indicate 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) move 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 deadweight 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.

Our paper 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 the next section. Section 3 identifies the sources and describes the nature of the data used. Section 4 presents the results of regressions of cash against the measures of the likelihood of political extraction. Section 5 presents various robustness tests of our primary findings. Section 6 presents the

results of regressions of annual investment in property, plant, equipment, and inventory plus payments to suppliers of capital against the measures of political extraction and the results of regressions of various measures of employment against the measures of the likelihood of political extraction. Section 6 also presents evidence on other ways of asset sheltering including the use of unconsolidated subsidiaries and the use of political connections to protect liquid assets. Section 7 estimates the loss in firm value due to corruption and the value preserved by sheltering assets that is implied by our analysis. Section 8 concludes.

2. Background

2.1. 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).⁴ She analyzes three situations in which politicians extract bribes from firms seeking to obtain government contracts. From that point, 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, Jones and Kaufmann (2003) who examine the interaction among firms and politicians in which firms both react to and help

⁴ In his survey, Bardhan (1997) traces the literature on the economics of political corruption to at least the fourth century B.C.

shape the political environment in which they operate, Mauro (1995) and Mo (2001) who examine the link between corruption and economic growth, Friedman, Johnson, Kaufmann and Zoido-Lobaton (2000), Johnson, Kaufmann, McMillan and Woodruff (2000), and Choi and Thum (2005) who examine the link between corruption and the size of a country's "underground" economy. This literature also encompasses various survey papers that connect these streams of research including Bardhan (1997) and Graf 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].⁵

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. Myers and Rajan (1998) argue that 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, it follows that owners are likely to reduce their holdings of liquid assets relative to

⁵ Stulz (2005), p. 1613.

other assets so as to reduce the likelihood of political extraction. 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) concludes that "...the more a firm can pay... the more it must pay..."⁶

The second implicit assumption in our reasoning is that there is an optimal level of cash holdings at which firms would 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 determination of the optimal level of cash holdings involves a trade-off between the cost of a cash "stock-out" and the cost of holding non-interest bearing cash.⁷ Empirical support for the trade-off models of cash holdings come from Opler, Pinkowitz, Stulz and Williamson (1999), Dittmar, Mahrt-Smith and Servaes (2003), and Kalcheva and Lins

⁶ Svensson (2003), p. 10. Supporting evidence is presented by Clarke and Xu (2003) for 21 transition economies in eastern Europe and central Asia.

⁷ Extensions to this literature include Eppen and Fama (1968, 1969), Constantinides (1976, 1978), Myers (1977) and Kim, Mauer and Sherman (1998).

(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.

2.2. An illustrative example

Before presenting our formal analysis, a bit of anecdotal evidence is illustrative of the dynamics that we have in mind. In 1992, the Italian government introduced a tax on liquid assets to be effective as of July 9 of that year:

The wealth tax, which will be collected in September, is a tax of 0.6% on deposits held in bank accounts and postal savings accounts as of July 9. It will apply to current savings and time-deposits accounts and on longer-term certificates of deposit...⁸

Given that this is a direct tax on “cash,” it is representative of the type of extraction that we have in mind. According to the Italian press, in an unprecedented occurrence, from before to after imposition of the tax (January 1992 in comparison with October 1992), Italian bank deposits declined by over ITL35.5 trillion.⁹

To investigate whether the decline in bank deposits showed up as a parallel decline in corporate cash holdings, we access *Datastream* for all 161 non-financial publicly-traded Italian firms. As of the end of 1990, the ratio of cash-to-total assets was 0.135. As of the end of 1993, the ratio had declined to 0.116. Italian firms and their owners appear to have responded to the potential for increased political extraction by shifting assets from liquid to less liquid forms. This anecdote is far from conclusive, but it exemplifies the idea that we explore more thoroughly below.

⁸ *Wall Street Journal Europe*, July 13, 1992, “Austerity budget for Italy will avert peril, Amato says – Tax increases, spending cuts and asset sales are part of a \$26 billion package.”

⁹ *Il Sole 24 Ore*, November 1, 1992, “I depositi frenano e il gesture tira il fiato.”

3. Data

Our primary empirical tests are based on cross-sectional regressions for the year 2005 encompassing the 109 countries listed in table 1. (As we discuss briefly later, the results for 2005 obtain for the years 2002-2004 and for 2006, albeit with slightly fewer observations.) 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, Kraay and Mastruzzi (2007). The second and third are from the *International Country Risk Guide* (IRCG) compiled by the *Political Risk Services Group*.¹⁰ The fourth is from Neumann (1994). Our primary measure of minority shareholder protection is the country's legal origin from La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) and from the CIA's *World Factbook*.¹¹ Our measure of private credit is from Djankov, McLiesh and Shleifer (2007), the *IMF's International Financial Statistics*, and Levine, Loayza and Beck (2000).

To be included in our analysis, a firm must be a non-financial 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.

¹⁰ <http://www.prsgroup.com>.

¹¹ <https://www.cia.gov/library/publications/the-world-factbook/index.html>.

Our primary independent variable is the ratio of cash-to-total assets. Our primary independent variable is the likelihood of political extraction. To capture this likelihood we use four indices, three of which are from independent sources. Each of the indices has certain virtues and potential deficiencies.

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...¹²

This measure, developed by Kaufmann, Kraay and Mastruzzi (2007), is compiled from several data sources including non-governmental 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 respondent/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 bribes¹³

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.¹⁴

¹² Kaufmann, Kraay and Mastruzzi (2007), p. 4.

¹³ http://www.prsgroup.com/ICRG_Methodology.aspx.

¹⁴ http://www.prsgroup.com/ICRG_Methodology.aspx.

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 separate aspects of the likelihood of political extraction and are developed by the same data provider, 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, therefore, the business 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 so that higher values of these variables denote a greater likelihood of political extraction. In discussions that follow, we refer to the four indices collectively as the “corruption variables.”

We also include the following control variables that previous papers have found to be significant determinants of corporate 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 term 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 for 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 in hard assets plus payouts to suppliers of capital to total assets (“Investments & Payouts/Total assets”) is investment plus payments to capital in year t divided by total assets at the end of year t.¹⁵ Size (“Ln(Total assets)”) is the natural “log of total assets at the end of year t measured in millions of U.S. dollars. “Largest shareholder” is the fraction of shares owned by the largest shareholder. “UK legal origin”

¹⁵ Because many of the countries in our sample do not require firms to report a cash flow statement, we calculate Investments & Payouts as $[-\text{Cash}_{(t)} + \text{Cash}_{(t-1)} + \text{Cash flow}_{(t)} - \text{Increase in receivables}_{(t)} + \text{Increase in payables}_{(t)} + \text{Interest payments}_{(t)}]$. This calculation follows from the accounting identity:

$\text{Cash}_{(t)} = \text{Cash}_{(t-1)} + \text{Cash flow}_{(t)} - \text{Increase in accounts receivable}_{(t)} + \text{Increase in accounts payable}_{(t)} - \text{Increase in inventory}_{(t)} - \text{Investments in fixed assets}_{(t)} + \text{Net debt issued}_{(t)} - \text{Dividends}_{(t)} + \text{Net equity issued}_{(t)}$. (The identity, as written, assumes some miscellaneous items, such as “Other current assets” are zero. Also note that “Cash flow,” as we define it in the text, is net of interest payments). The identity implies that $(\text{Investments in fixed assets}_{(t)} + \text{Increase in inventory}_{(t)} + \text{Interest paid}_{(t)} - \text{Net debt issued}_{(t)} + \text{Dividends}_{(t)} - \text{Net equity issued}_{(t)}) = -\text{Cash}_{(t)} + \text{Cash}_{(t-1)} + \text{Cash flow}_{(t)} - \text{Increase in accounts receivable}_{(t)} + \text{Increase in accounts payable}_{(t)} + \text{Interest paid}_{(t)}$). For a subset of firms for which the data are available, we also calculate Investments & Payouts as the $(\text{Increase in net fixed assets}_{(t)} + \text{Depreciation}_{(t)} + \text{Increase in inventory}_{(t)} + \text{Interest paid}_{(t)} - \text{Increase in long term and short term debt}_{(t)} + \text{Net income}_{(t)} - \text{Increase in shareholders' funds}_{(t)})$. The correlation coefficient between the two measures is 0.94 suggesting that our measure of Investments & Payouts yields a reliable proxy.

is an indicator variable to identify whether the legal origin of the country in which the firm is headquartered is common law. The ratio of private credit-to-GDP (“Private credit/GDP”) is the amount of credit provided to non-government owned entities by banks and other financial institutions divided by GDP.¹⁶ Finally, we include three-digit SIC industry indicators.

For the variables Cash/Total assets, Largest shareholder, Debt/Total assets, Accounts receivable/Total assets, Accounts payable/Total assets, and Inventory/Total assets, observations below 0 or above 1 must be data errors, therefore, we exclude them. To limit the effect of data errors in the variables Sales growth, Cash flow/Total assets, Investments & Payouts/Total assets, and Ln(Total assets), which are not naturally bounded between 0 and 1, we exclude 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 11 countries to 5,181 firms in the U.S.) 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 variables, along with all other continuous variables, are standardized to facilitate interpretation of the regression coefficients. Table

¹⁶ If this variable is available in Djankov, McLiesh and Shleifer (2007), we use their estimate. If Djankov et al. do not provide an estimate, we calculate the variable using IMF data as do Djankov et al. (p. 303): specifically, the variable is computed as the “[R]atio of credit from deposit-taking financial institutions to the private sector (IFS lines 22d and 42d) relative to GDP (IFS line 99b). Line 22d measures claims on the private sector by commercial banks and other financial institutions that accept transferable deposits such as demand deposits. Line 42d measures claims on the private sector given by other financial institutions that do not accept transferable deposits but that perform financial intermediation by accepting other types of deposits or close substitutes for deposits...” For a few countries, this variable is not available in either source, but is available in Levine, Loayza and Beck (2000).

1 gives the standardized corruption variables for each country for the year 2005. As might be expected, the four corruption variables are highly correlated. The correlation coefficients range from 0.66 between ICRG Corruption and ICRG Investment profile to 0.90 between KKM Corruption and ICRG Corruption.

4. Cash holdings and the likelihood of political extraction

4.1. Overview

We use ordinary least squares (OLS) 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 are corrected for heteroskedasticity and, for those in table 2, the standard errors are also corrected for the clustering of firms within 3-digit SIC industries in each country. To provide economic context for the effect of each of the independent variables on cash holdings, we estimate and report coefficients for the standardized variables.¹⁷ The interpretation of the coefficient is as follows: An increase or decrease of 1.0 in the independent variable represents the effect of a one standard deviation change in the independent variable on the dependent variable.

In each regression, the dependent variable is the ratio of cash-to-total assets.

4.2. Firm-level regressions

To begin, we focus on the firm-level regressions in table 2. Each of the regressions in panel A includes one of the corruption variables along with 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. As the table

¹⁷ We only standardize the continuous variables.

shows, the sign of the coefficient of each of the corruption variables is negative and highly statistically significant with a p-value of less than 0.001. 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 factors that prior studies have shown to be determinants of corporate cash holdings. Because we do not have observations on the control variables for every firm or every country, as we move from panel A to panel B, the number of firms and the number of countries in the regressions declines. For example, in the first regression, the number of firms declines from 29,820 to 17,360 and the number of countries declines from 109 to 79. Perhaps not surprisingly, the countries that drop out of the sample tend to have above average scores on the corruption variables.

With the exception of the sign of U.K. legal origin, the sign of the coefficients of each of the control variables is consistent with prior studies. More importantly from our perspective, the coefficient of each of the corruption variables is negative and highly statistically significant with p-values of 0.001 or less.¹⁸

To put the coefficients of the corruption indices into economic perspective, based upon the multivariate analysis, and depending upon the corruption variable used, a two standard deviation increase in the corruption variable from the mean corresponds to a decline in the ratio of cash-to-total assets that ranges from 10.0% to 16.3%. Thus, the

¹⁸ Dittmar et al. (2003) report that, across countries, the cash-to-total asset ratio is significantly negatively correlated with proxies for the quality of minority shareholder legal protection against expropriation by a controlling shareholder or management. A concern that has been expressed to us is that our corruption variables are just a different proxy for the quality of minority shareholder protection. However, if corruption is merely picking up minority shareholder protection or the lack thereof, our result is the opposite of what would be predicted based upon Dittmar et al., as we find that when corruption is low, cash holdings are higher.

likelihood of political extraction is not only statistically, but also economically, significant in explaining corporate holdings of liquid assets. The results are consistent with our prediction that firms and their owners structure their asset holdings 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. In the country-level regressions, the number of observations is equal to the number of countries for which we have data for at least one firm. So, for example, the first regression has 109 observations and the last has 78. The downside of this approach is that the power of the tests is reduced due to the smaller number of observations.

As shown in panel A of table 3, the coefficient of each of the corruption variables is negative and highly significant with a p-value of 0.003 or less. Interestingly, the coefficients of the corruption variables are roughly the same size as those in the firm-level regressions of table 2.

Parallel to table 2, the regressions in panel B of table 3 include the control variables. With the exception of Ln(Total assets), Cash flow/Total assets, and Delta NWC/Total assets, the signs of the coefficients of the control variables are the same as in panel B of table 2. As in table 2, when the control variables are included, the coefficient of each of

the corruption variables continues to be negative and statistically significant with p-values of 0.000, 0.007, 0.031, and 0.001, respectively. 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 corruption variable employed, in the country level regressions, a two standard deviation increase in the variable corresponds to a decline in the ratio of cash-to-total assets that ranges from 19.7% to 37.9%.¹⁹

5. Robustness tests

As with any empirical study, at various stages of the analysis choices were made with respect to empirical methodology, variables to be employed, and specifications of tests. In this section, we briefly describe the results of variations on those choices.

5.1. Other years

We use data from the year 2005 in our primary analysis because of data availability. We also estimated each of the regressions in tables 2 and 3 with data for the years 2002-2004 and for 2006 (albeit with fewer observations). These comprise 32 regressions. In each regression, the coefficient of the corruption variable is negative and 28 of the 32 p-values are less than 0.05. The other four are 0.060, 0.094, 0.117, and 0.159. Thus, the negative correlation between corporate cash holdings and the likelihood of political extraction is not unique to 2005.

¹⁹ Because some countries have few firms and, thus, are over-weighted in the country-level regressions, we re-estimate the regressions in table 3 after dropping all countries with 10 or fewer firms. In these regressions, the coefficient of each of the corruption variables is negative and significant with a p-value of 0.023 or less.

5.2. Endogeneity

We address concerns about endogeneity using two common approaches. We first re-estimate the regressions of table 2 with each of the independent variables lagged one, two, or three years. In each of these regressions, the corruption variable has a negative coefficient and the p-value is less than 0.001.

Our second approach uses an instrumental variable to predict corruption, the endogenous variable. We estimate the simultaneous equations separately using two different instruments. The first is an index of Ethnolinguistic fractionalization constructed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1999). The second is the Latitude of the country, from the CIA's *World Factbook*.²⁰ We estimate the four regressions in panel B of table 2 separately with each of the instrumental variables. In each of the second stage regressions, the coefficient of the corruption variable is negative with a p-value of less than 0.001. Thus, our results are not due to simultaneity in the determination of the dependent and independent variables or to measurement error in the corruption variables.

5.3. Tobit and logistic transformations of the dependent variable

As Cash/Total assets is bounded between 0 and 1, we alternatively estimate the regressions of table 2 using a two-boundary Tobit model and a logistic transformation of the dependent variable, where the dependent variable, z_i , is computed as $z_i = \ln\left(\frac{y_i}{1-y_i}\right)$, where y_i is the ratio of Cash/Total assets. In each one of the former specifications, the coefficient of the corruption variable is negative with a p-value less than 0.001. In the latter specifications, the coefficient of each of the corruption variables is negative with p-

²⁰ <https://www.cia.gov/library/publications/the-world-factbook/index.html>.

values of 0.027 or less. Thus, our results are not specific to the estimation technique employed.

6. Related issues

6.1. Overview

In sum, both the results of the firm-level regressions and of the country-level regressions are consistent with our 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.

In this section we consider whether the cash is (1) extorted directly by politicians or government bureaucrats, (2) invested in hard assets and/or paid out to shareholders and debt holders (i.e., providers of capital), (3) extorted indirectly by requiring firms to provide employment to favored constituencies, (4) “hidden” in unconsolidated subsidiaries, or (5) sheltered by owners becoming part of the political process.

6.1 Is the negative relation between cash and corruption due to direct extortion?

We find a significant and robust negative relation between the level of liquid assets held by publicly traded corporations and various measures of political corruption across countries - - firms in more corrupt countries hold fewer liquid assets than otherwise similar firms in less corrupt countries. Could it be that this relation occurs because in more corrupt countries the cash has already been extorted?

We believe that logic militates against that possibility. The logic goes as follows: The cash-to-assets ratio that we observe could be measured either before or after the payment of bribes. On the one hand, if the bribes have yet to be paid and if firms operate with an optimal level of cash, the observed cash-to-assets ratio should be higher in countries where the threat of political extraction is higher because firms would hold sufficient cash so as to be able to pay bribes and still have enough cash to operate efficiently. On the other hand, if the bribes have already been paid and if firms operate with an optimal level of cash, the observed cash-to-assets ratio would be independent of the likelihood of political extraction across countries. In either case, the negative coefficients of the corruption variables in tables 2 and 3 are inconsistent with the logic.

Note, we are not disputing that more funds are extracted in more corrupt countries. Our point is that the negative relation that we observe between the cash-to-asset ratio and our measures of corruption is not due to greater political extraction in more corrupt countries. In sum, the regressions combined with logic lead to the conclusion that firms and their owners have made affirmative decisions to hold fewer liquid assets when the risk of political extraction is higher.

6.2 Investments in hard assets and payments to providers of capital

If the empirical relation that we observe is not due to greater political extortion, it must be that the cash is sheltered in some way from political extraction. A natural candidate is that the cash is either invested in hard assets or paid out to suppliers of capital in the form of dividends, repurchase of shares, payment of interest, or the pay down of debt.

If the mechanism for sheltering cash is to invest in hard assets or to return capital to investors, we would expect to see an increase in investments in property, plant, equipment, and inventory plus payments to capital (“Investments & Payouts”) as the likelihood of political extraction increases. To examine this proposition, we estimate firm-level OLS regressions in which the dependent variable is the ratio of Investments & Payouts-to-sales against the corruption variables along with the control variables used in the regressions of tables 2 and 3. The dependent variable is calculated as Investment & Payouts during 2006 divided by sales during 2006.²¹ The independent variables are from 2005. The corruption variables indicate whether relative investment in hard assets plus payments to capital suppliers is correlated with the likelihood of political extraction

For all the regressions, the standard errors are corrected for heteroskedasticity and for the clustering of firms within 3-digit SIC industries in each country. As before, to provide economic context for the effect of each of the independent variables on the dependent variable, we report coefficients of the standardized variables. The results are presented in table 4.

The coefficient of each of the corruption variables is positive and highly statistically significant with a p-value of less than 0.001. These results indicate that, holding other factors constant, firms in countries with a higher threat of political extraction invest relatively more in property, plant, equipment and inventory and/or pay out more to

²¹ As the numerator of our dependent variable, we use Investments & Payouts as defined in footnote 15. If we were to add to the numerator [Increase in accounts receivable_(t) – Increase in accounts payable_(t) – Cash flow_(t) – Interest paid_(t)], we would obtain the net decrease in cash holdings experienced between period t-1 and period t (this calculation, ignores some miscellaneous items such as changes in “other” liabilities). Thus, it follows that, after controlling for cash flow, the change in payables, and the change in receivables -- as we do in our regressions -- our dependent variable measures the amount of capital invested or repaid to suppliers of capital from accumulated cash.

the suppliers of capital 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 domiciled in a more corrupt country, the firm will invest more in hard assets and/or pay out more to suppliers of capital per dollar of sales 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 and creditors. This result is consistent with our prediction that firms and their owners structure assets (i.e., hold less funds in liquid form) to shelter them from political extraction, especially in more corrupt countries.

6.3. Excessive employment

We have argued that logic militates against the possibility that the negative empirical relation between the cash-to-asset ratio and the corruption variables is due to direct extortion of the cash. We also find a positive correlation between investment in hard assets and the corruption variables. Perhaps this relation is due to indirect extortion.

Bertrand et al. (2007) and Fan and Wong (2007) argue that politicians sometimes extract resources from firms by requiring that firms boost employment unnecessarily in regions or districts where the politicians stand for re-election. (Alternatively, in countries in which elections are pro forma, rulers may require higher employment to “quiet” an otherwise restive populace.) If this occurs in countries with higher levels of corruption, it might explain the higher cash outflows to fund investments in such countries. All else equal, it would also predict higher levels of employment in those countries.

To consider this alternative explanation of lower cash holdings (and higher investments) in countries with a higher likelihood of political extraction, we estimate firm-level OLS regressions in which the dependent variable is the number of employees per dollar of total assets and the independent variables are the four measures of the likelihood of political extraction along with the control variables used in the previous firm-level regressions. We additionally include GDP per capita to control for the differences in wages across countries.

The dependent variable is the number of employees reported at year-end 2005 divided by total assets as of year-end 2005. As always, standard errors are adjusted for heteroskedasticity and clustering, and estimated coefficients are standardized.

The results of the regressions are reported in table 5. Each of the corruption variables has a negative and highly significant coefficient (p-values < 0.001). These results are inconsistent with the conjecture that the cash holdings are lower in countries with a higher likelihood of political extraction because politicians require companies to boost employment. These results support the interpretation that the negative relation between cash holdings and measures of political corruption arise because firms and their owners structure their asset holdings, at least in part, so as to shelter them from political extraction.

6.4. Off-balance sheet cash

Our analysis presumes that the financial statements of the firms are reliable. That would seem to be a reasonable presumption, at least on average, given that all of the firms in the sample are publicly traded and have audited financial statements. Thus, the ability of the firms to “hide” cash is limited. Our analysis further presumes that, if firms have

subsidiaries, the subsidiaries' financial statements are consolidated with those of the parent. In some instances, however, parent firms have unconsolidated subsidiaries.

In those instances, parent firms may be able to shelter cash by holding the cash in their unconsolidated subsidiaries. If that is the case, we would predict (1) that firms domiciled in more corrupt countries are more likely to have unconsolidated subsidiaries than otherwise similar firms domiciled in less corrupt countries, (2) that those firms that do have unconsolidated subsidiaries would hold less cash on their own balance sheets than otherwise similar firms that do not have unconsolidated subsidiaries, and (3) that, for firms with unconsolidated subsidiaries, the relation between Investment & Payouts and our corruption variables will be non-existent or, at a minimum, lower than the relation between these variables for other firms.

To test these predictions, we first estimate a probit regression predicting the likelihood that a firm will have unconsolidated subsidiaries where we use *Orbis* to identify firms with unconsolidated subsidiaries. In the probit regressions, the independent variables are the corruption variables along with the control variables used in table 2. In each of the four regressions (not shown in a table), the coefficient of the corruption variable is positive and statistically significant with a p-value of less than 0.043. Thus, in more corrupt countries, parent firms are significantly more likely to have unconsolidated subsidiaries.

We then re-estimate the regressions of table 2 including an indicator variable denoting whether a firm has at least one unconsolidated subsidiary. The first column of table 6 reports the results of the regression using KKM Corruption as our measure of the likelihood of political extraction. As shown in the table, the coefficient of the indicator for unconsolidated subsidiaries is negative and statistically significant with a p-value of less

than 0.001. Not shown in the table are the regressions with the other three corruption measures. In each of these, the coefficient of the indicator for unconsolidated subsidiaries is negative and significant with a p-value of less than 0.001. Thus, the results are consistent with the proposition that parent companies park at least some of their cash in their unconsolidated subsidiaries to shelter it from extraction by politicians and bureaucrats.

Finally, we estimate the regressions of table 4 for the subset of firms that have unconsolidated subsidiaries. The second column of table 6 reports the results of the regression in which KKM Corruption is used as our measure for the likelihood of political extraction. As shown in column 2, consistent with our prediction, the relation between (Investments & Payouts/Assets) and KKM Corruption is not statistically significant for the subset of companies that do have unconsolidated subsidiaries. This result is consistent with the idea that parking the cash in the unconsolidated subsidiaries is used to shelter assets from extraction by politicians and bureaucrats.

6.5 Political connections

Another mechanism that owners may use to reduce the threat of political extraction of liquid assets is to become part of the political process or, alternatively, politicians may become business owners. If the firm's owners are part of the political process they may be able to use their political connections to reduce the threat of political extraction of their firm's resources. If that is the case, we would predict (1) that firms domiciled in more corrupt countries are more likely to have political connections than otherwise similar firms domiciled in less corrupt countries, (2) that those firms that do have political connections would hold more cash than otherwise similar firms that do not have political connections,

and (3) that, for firms with political connections, the relation between (Investment & Payouts/Sales) and our corruption variables will be weak or non-existent.

To begin, we identify the firms in our sample as having political connection using Faccio's (2006) database. Faccio identifies a firm as being politically connected if "at least one of [the firm's] large shareholders (anyone controlling at least 10 percent of voting shares) or one of its top officers (CEO, president, vice-president, chairman, or secretary) is a member of parliament, a minister, or is closely related to a top politician or party."²² Undoubtedly the firms identified by Faccio as being politically connected are politically connected. However, it is very likely that some firms not identified by Faccio as being politically connected are connected to politicians by other means. This type of classification error is likely to reduce our ability to detect the type of relation specified in our second prediction.

To test our first prediction, we estimate a probit model in which the dependent variable is an indicator for whether a firm is politically connected. There are 162 such firms in our sample. The independent variables are the same as those in table 2. The coefficients of the corruption variables (not shown in a table) are all positive and statistically significant with p-values less than 0.002. Thus, firms located in more corrupt countries are more likely to be politically connected than are those in less corrupt countries.

To test the second prediction, we re-estimate the regressions of table 2 including an indicator to denote whether a firm is politically connected. The results of the regression with KKM Corruption are given in the third column of table 6. The coefficient of the connection indicator is positive but not statistically significant with a p-value of 0.169.

²² Faccio (2006), p. 369.

Not shown in the table are the regression specifications in which we employ the other three measures of the likelihood of political extraction. In those regressions, the coefficients of the political connections indicator are positive with p-values of 0.065, 0.147, and 0.101. These results are mildly consistent with the notion that political connections reduce the need for firms to shelter liquid politicians and bureaucrats. As we noted above, however, this result is likely to underestimate the true relation between cash and political connections because some, perhaps many, firms that are politically connected are misclassified as not being politically connected.

Finally, we test whether the relation between (Investments & Payouts/Assets) and corruption is weaker for the subset of companies that have political connections. We test this prediction by estimating the regressions of table 4 with the sample of firms indentified as being politically connected. The last column of table 6 reports the results of the regression in which KKM Corruption is our measure of corruption. The coefficient of KKM Corruption is negative and not statistically significant. Apparently firms that are politically connected have less need to shelter assets by investing in hard assets and paying out funds to suppliers of capital.

7. The deadweight loss due to political extraction

Presumably political extraction represents a deadweight loss to firms. We have argued that owners structure the asset holdings of their firms so as to reduce the threat of political extraction. If so, it is reasonable to further presume that such asset sheltering can reduce, to some extent, the deadweight loss due to political extraction.

In this section, we estimate the deadweight loss in firm value due to political extraction. The loss in value has two components: (1) the loss in value that would occur if the firm held no liquid assets and (2) the additional loss in value due to the holding of liquid assets. Because a firm holds less in liquid assets in a more corrupt country than it would have held in a less corrupt country, the loss in the value due to the holding of liquid assets is less than it would have been had the firm not sheltered. The reduction in loss is the value preserved by structuring assets so as to reduce the likelihood of assets extraction. Once we have estimated the loss in value due to political extraction, we calculate the value that is preserved by holding a lesser amount of liquid assets than the otherwise “optimal” amount.

In this analysis, we use KKM Corruption as our measure of corruption. However, the results with KKM Corruption are representative of results obtained with the other measures of corruption.

To estimate the loss in firm value due to political extraction, we estimate a regression in which the dependent variable is Tobin’s Q (measured as the market value of equity plus the book value of debt divided by the book value of total assets as of the end of 2005). The independent variables are KKM Corruption, the ratio of cash-to-total assets, the interaction between KKM Corruption and the ratio of cash-to-total assets, Largest shareholder, Debt/Total assets, Cash flow/Total assets, Investments & Payouts/Total assets, Size, and UK Legal origin. We do not report the coefficients of the regression in a table.

The coefficient of KKM Corruption measures the effect of corruption on firm value. The coefficient of this variable is negative and statistically significant with a p-

value of 0.051. To provide economic context for the effect of corruption on firm value, we give a numerical example: for a firm with a book value of total assets of \$100 million, a two standard deviation increase in KKM Corruption is associated in a decline in market value of \$6.0 million. This figure represents the loss in value that occurs regardless of the structure of a firm's assets.

The second component of the deadweight loss is the additional loss due to the potential for extraction of liquid assets. The amount of this incremental loss is computed using the coefficient of the interaction between KKM Corruption and the ratio of cash-to-total assets. This coefficient is negative with a p-value of 0.048. Continuing our numerical example, assume that the firm holds \$15.1 million in liquid assets.²³ If so, a two standard deviation increase in KKM Corruption results in an additional loss in value of \$5.8 million due to the threat of extraction of liquid assets. Thus, the overall deadweight loss in firm value due to political extraction is \$11.8 million.

In the numerical example, we use the post-sheltering level of liquid assets. Had the firm not sheltered liquid assets (i.e., had the firm held the otherwise optimal amount of liquid assets), it would have suffered a further loss of \$0.8 million. In other words, \$0.8 million is the value preserved because the firm holds a lesser amount of liquid assets when the threat of political extraction is high.

Our analysis of the relation between corporate value and firms' ability to shelter their assets from political extraction is based on the use of cross-sectional data. A possible concern with this approach is that the results may reflect other institutional factors correlated with political corruption. One way to address this concern is to focus on

²³ This figure is based on the regression results in table 2 which imply that, on average, firms in a country with KKM Corruption two standard deviations above the mean hold 15.1% of their total assets in cash.

exogenous shocks that potentially disrupt firms' abilities or needs to shelter their assets from political extraction. Our illustrative example in section 2.2 provides one such experiment.

More detailed investigations include Fisman (2001) and Johnson and Mitton (2003). Fisman (2001) examines exogenous shocks to the health of Indonesian President Suharto and documents that, for firms close to the President by virtue of family links or friendship, an increase in the likelihood of losing political protection results in a significant loss in firm value. This result is consistent with political connections sheltering firms from political extraction of their assets. Johnson and Mitton (2003) examine the impact of the Asian economic crisis of 1997-98 on the performance of Malaysian publicly traded firms. They find that, while the performance of politically connected firms was particularly poor in the first phase of the crisis, these firms outperformed their unconnected peers following the introduction of capital controls in 1998. They interpret their findings as supportive of the idea that stock prices adjusted to reflect changes in expectations about the possible loss of government protection and subsidies.

Our results with cross-sectional data are consistent with the results from time series studies of exogenous shocks that apparently affect firms' abilities to shelter assets from political extraction.

8. Conclusion

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...²⁴

Building upon Stulz (2005), we argue that the same principles apply 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 alternately using four different measures of the likelihood of political extraction (which we label the corruption variables) as the key independent variable along with a host of control variables that prior studies have found to be significant in explaining corporate cash holdings within and across countries. 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 show that firms located in countries where the likelihood of political extraction is higher invest more in harder to extract assets and/or pay out more to suppliers of capital, are more likely to have

²⁴ Eiteman, Stonehill and Moffett (2001), pp. 399-400.

unconsolidated subsidiaries where cash can be parked, and are more likely to have established political connections that can help to shelter the firm's assets from political extraction. This result indicates 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 retards economic development.

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Table 1. Descriptive statistics.

This table gives descriptive statistics as of 2005, by country, for all non-financial 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, Kraay and Mastruzzi, 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" (*International Country Risk Guide* 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 a standard deviation of one.

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	0.191	-1.400	-1.711	-1.009	-1.257
Australia	1,349	0.276	-1.525	-1.711	-1.009	-1.257	Macedonia	2	0.018	0.789			1.091
Austria	66	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	1	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	143	0.159	-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	0.218	-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	Netherlands	137	0.127	-1.545	-1.711	-1.009	-1.257
Bosnia and Herzegovina	1	0.012	0.615				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	126	0.049	0.384	0.595	-0.786	-0.083	Nigeria	13	0.104	1.560	1.108	2.174	1.678
Canada	986	0.231	-1.477	-1.743	-1.009	-1.257	Norway	301	0.205	-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	1,386	0.150	1.030	0.595	1.132	1.091	Panama	6	0.057	0.634	0.595	-0.116	
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	206	0.021	0.278	0.211	0.108	-0.083	Peru	115	0.069	0.846	0.211	0.778	0.504

Table 1. Continued.

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
Cyprus	2	0.189	-0.301	-0.942	-1.009		Philippines	146	0.130	0.943	0.595	0.220	1.678
Czech Republic	69	0.124	-0.031	0.211	-0.786	-0.083	Poland	192	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	533	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	799	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	677	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	437	0.193	-1.651	-1.711	-1.009	-1.257
Iceland	28	0.052	-2.036	-2.096	-0.562		Switzerland	180	0.162	-1.680	-1.327	-0.991	-1.257
India	1,236	0.077	0.692	0.211	0.182	1.091	Taiwan	1,372	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	67	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	0.114	-0.021	0.211	-1.009	0.504	Turkey	55	0.115	0.422	0.211	0.778	-0.083
Jamaica	21	0.146	0.827	0.980	0.313		Ukraine	25	0.058	0.972	0.820	0.908	-0.083
Japan	3,653	0.176	-0.831	-0.558	-0.786	-1.257	United Arab Emirates	36	0.240	-0.706	0.595	-0.786	1.091
Jordan	104	0.102	0.056	-0.173	-0.041	-0.083	United Kingdom	1,928	0.214	-1.496	-1.327	-1.009	-1.257
Kazakhstan	1	0.022	1.280	0.980	0.704	-0.083	USA	5,181	0.240	-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.)	1,465	0.104	-0.079	0.211	-0.153	0.504	Venezuela	22	0.129	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										

Table 2. Cash holdings and the potential for political extraction: Firm-level regression results with 2005 data.

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 variables other than Ownership concentration, Cash/Total assets and Debt/Total assets are trimmed at the top/bottom 1%. For Ownership concentration, Cash/Total assets and Debt/Total assets observations below 0 or above 1 are excluded. All regressions include 3-digit SIC industry indicators. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. P-values, reported in parentheses below the coefficients, are based on standard errors adjusted for heteroskedasticity and clustering at the country/industry level.

	Panel A			
	(1)	(2)	(3)	(4)
KKM Corruption	-0.032 (0.000)			
ICRG Corruption		-0.032 (0.000)		
ICRG Investment profile			-0.022 (0.000)	
Neumann Corruption				-0.032 (0.000)
Intercept	0.172 (0.000)	0.172 (0.000)	0.169 (0.000)	0.172 (0.000)
Number of observations	29,820	28,906	28,906	28,523
Number of countries	109	97	97	78
R-squared (Adjusted)	17.47%	18.02%	16.96%	18.06%

Table 2. Continued.

	Panel B			
	(1)	(2)	(3)	(4)
KKM Corruption	-0.010 (0.000)			
ICRG Corruption		-0.014 (0.000)		
ICRG Investment profile			-0.009 (0.001)	
Neumann Corruption				-0.013 (0.000)
Sales growth	0.002 (0.477)	0.001 (0.524)	0.002 (0.463)	0.002 (0.423)
Debt/Total assets	-0.040 (0.000)	-0.040 (0.000)	-0.040 (0.000)	-0.039 (0.000)
Cash flow/Total assets	0.037 (0.000)	0.038 (0.000)	0.037 (0.000)	0.037 (0.000)
Delta NWC/Total assets	-0.039 (0.000)	-0.039 (0.000)	-0.039 (0.000)	-0.039 (0.000)
Investments & Payouts/Total assets	-0.077 (0.000)	-0.077 (0.000)	-0.076 (0.000)	-0.076 (0.000)
Ln (Total assets)	-0.007 (0.000)	-0.007 (0.000)	-0.007 (0.000)	-0.008 (0.000)
Ownership concentration	-0.005 (0.000)	-0.006 (0.000)	-0.005 (0.000)	-0.005 (0.000)
UK legal origin	0.010 (0.108)	0.005 (0.351)	0.012 (0.054)	0.009 (0.118)
Private credit/GDP	0.012 (0.000)	0.011 (0.000)	0.014 (0.000)	0.011 (0.000)
Intercept	0.152 (0.000)	0.154 (0.000)	0.150 (0.000)	0.152 (0.000)
Number of observations	17,360	17,359	17,359	17,239
Number of countries	79	78	78	68
R-squared (Adjusted)	32.37%	32.53%	32.31%	32.54%

Table 3. Cash holdings and the potential for political extraction: Country-level regression results with 2005 data.

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 variables other than Ownership concentration, Cash/Total assets and Debt/Total assets are trimmed at the top/bottom 1%. For Ownership concentration, Cash/Total assets and Debt/Total assets observations below 0 or above 1 are excluded. All regressions include 3-digit SIC industry indicators. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. P-values, reported in parentheses below the coefficients, are based on standard errors adjusted for heteroskedasticity.

	Panel A			
	(1)	(2)	(3)	(4)
KKM Corruption	-0.035 (0.000)			
ICRG Corruption		-0.023 (0.000)		
ICRG Investment profile			-0.021 (0.003)	
Neumann Corruption				-0.029 (0.000)
Intercept	0.120 (0.000)	0.119 (0.000)	0.118 (0.000)	0.121 (0.000)
Number of observations	109	97	97	78
R-squared (Adjusted)	24.47%	13.70%	10.97%	21.90%

Table 3. Continued.

	Panel B			
	(1)	(2)	(3)	(4)
KKM Corruption	-0.024 (0.000)			
ICRG Corruption		-0.015 (0.007)		
ICRG Investment profile			-0.013 (0.031)	
Neumann Corruption				-0.018 (0.001)
Sales growth	0.013 (0.119)	0.011 (0.216)	0.014 (0.108)	0.016 (0.072)
Debt/Total assets	-0.023 (0.000)	-0.023 (0.000)	-0.020 (0.000)	-0.021 (0.005)
Cash flow/Total assets	0.002 (0.824)	-0.001 (0.949)	-0.005 (0.515)	-0.005 (0.558)
Delta NWC/Total assets	0.002 (0.691)	0.008 (0.395)	0.010 (0.262)	0.003 (0.891)
Investments & Payouts/Total assets	-0.009 (0.032)	-0.007 (0.131)	-0.005 (0.310)	-0.003 (0.787)
Ln (Total assets)	0.015 (0.004)	0.014 (0.008)	0.017 (0.003)	0.016 (0.008)
Ownership concentration	-0.004 (0.504)	-0.004 (0.521)	-0.002 (0.728)	-0.009 (0.184)
UK legal origin	0.034 (0.005)	0.036 (0.005)	0.032 (0.010)	0.031 (0.052)
Private credit/GDP	0.005 (0.378)	0.011 (0.059)	0.013 (0.035)	0.010 (0.079)
Intercept	0.109 (0.000)	0.109 (0.000)	0.109 (0.000)	0.111 (0.000)
Number of observations	83	81	81	69
R-squared (Adjusted)	62.27%	57.64%	56.94%	62.60%

Table 4. Investments & payouts and the potential for political extraction:
Firm-level regression results with 2005 data.

This table presents ordinary least squares regressions in which the dependent variable is the ratio of Investments & Payouts/Sales. The firm is the unit of observation. All variables other than Ownership concentration and Debt/Total assets are trimmed at the top/bottom 1%. For Ownership concentration, and Debt/Total assets, observations below 0 or above 1 are excluded. All regressions include 3-digit SIC industry indicators. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. P-values, reported in parentheses below the coefficients, are based on standard errors adjusted for heteroskedasticity and clustering at the country/industry level.

	(1)	(2)	(3)	(4)
KKM Corruption	0.069 (0.000)			
ICRG Corruption		0.087 (0.000)		
ICRG Investment profile			0.072 (0.000)	
Neumann Corruption				0.076 (0.000)
Sales growth	-0.051 (0.026)	-0.050 (0.029)	-0.052 (0.023)	-0.052 (0.024)
Debt/Total assets	0.045 (0.013)	0.048 (0.009)	0.046 (0.011)	0.047 (0.010)
Cash flow/Total assets	0.515 (0.000)	0.513 (0.000)	0.515 (0.000)	0.515 (0.000)
Delta NWC/Total assets	-0.028 (0.094)	-0.028 (0.089)	-0.027 (0.105)	-0.029 (0.086)
Ln (Total assets)	0.069 (0.000)	0.074 (0.000)	0.071 (0.000)	0.070 (0.000)
Ownership concentration	0.022 (0.051)	0.023 (0.040)	0.019 (0.097)	0.022 (0.050)
UK legal origin	-0.082 (0.004)	-0.059 (0.028)	-0.089 (0.002)	-0.081 (0.004)
Private credit/GDP	0.038 (0.026)	0.051 (0.005)	0.028 (0.082)	0.049 (0.006)
Intercept	-0.055 (0.009)	-0.066 (0.002)	-0.053 (0.012)	-0.063 (0.004)
Number of observations	12,003	12,002	12,002	11,908
Number of countries	70	69	69	62
R-squared (Adjusted)	18.20%	18.29%	18.23%	18.25%

Table 5. Employment levels and the potential for political extraction: Firm-level regression results with 2005 data.

This table presents ordinary least squares regressions in which the dependent variable is the ratio of number of employees to total assets ($\times 1,000$). The firm is the unit of observation. All variables other than Ownership concentration and Debt/Total assets are trimmed at the top/bottom 1%. For Ownership concentration, and Debt/Total assets observations below 0 or above 1 are excluded. Financial firms (SIC 6000-6999) are excluded. All regressions include 3-digit SIC industry indicators. Higher values of KKM Corruption, ICRG Corruption, ICRG Investment profile, and Neumann Corruption denote a greater likelihood of political extraction. P-values, reported in parentheses below the coefficients, are based on standard errors adjusted for heteroskedasticity and clustering at the country/industry level.

	(1)	(2)	(3)	(4)
KKM Corruption	-0.997 (0.000)			
ICRG Corruption		-1.371 (0.000)		
ICRG Investment profile			-1.154 (0.000)	
Neumann Corruption				-0.883 (0.000)
Sales growth	-0.222 (0.000)	-0.242 (0.000)	-0.215 (0.000)	-0.226 (0.000)
Debt/Total assets	0.019 (0.767)	-0.011 (0.866)	0.027 (0.682)	0.031 (0.643)
Cash flow/Total assets	-0.005 (0.964)	0.009 (0.937)	-0.011 (0.927)	0.005 (0.966)
Delta NWC/Total assets	0.136 (0.061)	0.155 (0.033)	0.138 (0.058)	0.142 (0.051)
Investments & Payouts/Total assets	0.645 (0.000)	0.655 (0.000)	0.669 (0.000)	0.668 (0.000)
Ln (Total assets)	-1.266 (0.000)	-1.304 (0.000)	-1.285 (0.000)	-1.324 (0.000)
Ownership concentration	0.343 (0.000)	0.284 (0.000)	0.353 (0.000)	0.403 (0.000)
UK legal origin	2.018 (0.000)	1.694 (0.000)	2.084 (0.000)	2.139 (0.000)
Private credit/GDP	0.047 (0.699)	-0.172 (0.147)	0.225 (0.077)	-0.017 (0.888)
LN (GDP per-capita)	-3.844 (0.000)	-4.064 (0.000)	-4.094 (0.000)	-3.632 (0.000)
Intercept	6.360 (0.000)	6.567 (0.000)	6.375 (0.000)	6.241 (0.000)
Number of observations	11,985	11,985	11,985	11,968

Number of countries	63	63	63	58
R-squared (Adjusted)	29.76%	30.28%	29.66%	29.76%

Table 6. Cash holdings, investments & payouts, and the potential for political extraction.

Columns (1) and (3) report the results of ordinary least squares regressions in which the dependent variable is the ratio of cash-to-total assets. Columns (2) and (4) report the results for ordinary least squares regressions in which the dependent variable is the ratio of Investments & Payouts/Sales. The results in Column (2) refer to the sub-sample of firms with unconsolidated subsidiaries. The results in Column (4) refer to the sub-sample of firms with political connections. The firm is the unit of observation. All variables other than Ownership concentration, Cash/Total assets and Debt/Total assets are trimmed at the top/bottom 1%. For Ownership concentration, Cash/Total assets and Debt/Total assets observations below 0 or above 1 are excluded. Financial firms (SIC 6000-6999) are excluded. All regressions include 3-digit SIC industry indicators. Higher values of KKM Corruption denote a greater likelihood of political extraction. P-values, reported in parentheses below the coefficients, are based on standard errors adjusted for heteroskedasticity and clustering at the country/industry level.

Dependent variable:	(1) Cash/Total assets	(2) Investments & Payouts/Sales	(3) Cash/Total assets	(4) Investments & Payouts/Sales
Sample:	All firms	Unconsol. subs.	All firms	Connected firms
Unconsolidated subs.	-0.019 (0.000)			
Connected			0.013 (0.169)	
KKM Corruption	-0.009 (0.000)	0.002 (0.981)	-0.012 (0.000)	-0.011 (0.460)
Sales growth	0.001 (0.718)	-0.013 (0.563)	0.000 (0.832)	0.165 (0.055)
Debt/Total assets	-0.038 (0.000)	0.046 (0.030)	-0.039 (0.000)	-0.029 (0.287)
Cash flow/Total assets	0.039 (0.000)	0.320 (0.000)	0.034 (0.000)	-0.043 (0.478)
Delta NWC/Total assets	-0.040 (0.000)	0.018 (0.588)	-0.038 (0.000)	0.033 (0.236)
Investments & Payouts/ Total assets	-0.077 (0.000)		-0.075 (0.000)	
Ln (Total assets)	-0.007 (0.000)	0.070 (0.000)	-0.007 (0.000)	0.059 (0.003)
Ownership concentration	-0.006 (0.000)	0.021 (0.324)	-0.006 (0.000)	0.048 (0.053)
UK legal origin	0.006 (0.289)	-0.100 (0.251)	0.010 (0.092)	-0.025 (0.591)
Private credit/GDP	0.011 (0.001)	-0.028 (0.629)	0.009 (0.015)	0.014 (0.589)
Intercept	0.153 (0.000)	-0.003 (0.910)	0.152 (0.000)	0.171 (0.000)
Number of obs.	12,514	1,062	15,495	117
R-squared (Adjusted)	32.72%	32.04%	33.66%	80.61%