AUDIT FEES AND CORRUPTION

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Abstract:

This study examines the relationship between the level of corruption and audit fees. We analyze 41,628 firm year observations on companies from 24 countries with differing but significant levels of corruption between 1998 and 2014. Using audit fees for the sample companies and corruption as defined by Kaufmann (2014) and while controlling for firm and country level variables we find that audit fees increase with higher levels of corruption. We also find that the Big-4 fee premium increases with the level of corruption. Our results are robust to a number of sensitivity tests. Our study addresses a gap in the literature on audit fees and provides a centerpiece for future research in this field.

Keywords:
Audit Fees, Big-4 Premium, Corruption

1. Introduction

There is a significant literature on corruption and its effects on both macro and microeconomic factors. Similarly, audit fees have been the subject of many empirical studies and have been shown to be affected by several different economic and non-economic factors. However, the existing literature has not considered corruption as a determinant of audit fees.

Corruption is a major problem in the world today. According to Transparency International more than 6 billion people live in countries with a serious corruption problem and 68% of countries score below 50 out of 100 on the Corruption Perceptions Index (CPI) (2015). It is the target of action by a range of international agencies such as the World Bank, IMF, and the OECD. Nevertheless, it is sometimes argued that corruption may have a positive impact on an economy because it might facilitate transactions that otherwise would not occur. However, this view accepts as a given the poor governance that corruption bypasses and the more general view is that corruption has negative impacts on the economy and society (Meon & Sekkat, 2005, Malagueno, 2010).

A range of factors have been shown to be linked to corruption, including growth (Mo, 2001; Mauro, 1995), GDP (Lambsdorff, 2005), income (Lambsdorff, 2005), stage of development (Blackburn, & Forgues-Puccio, 2010), and culture (Seleim & Bontis, 2009). However, the level of corruption may reduce with increased levels of exposure to, and the adoption of, International Financial Reporting Standards (Houqe, & Monem, 2015), higher levels of education, judicial efficiency and economic freedom (Ali, & Isse, 2003), increased ICT investment (Charoensukmongkol, & Moqbel, 2014; DiRienzo, Das, Cort, & Burbridge, 2007), development (Blackburn et al., 2010; Dzhumashev, 2014) and accounting (Malagueno, Albrect, Ainge, & Stephens, 2010). Adversely, corruption may be enabled by accounting (Neu, Everett, Rahaman, & Martinez, 2013), ICT investment (Charoensukmongkol et al., 2014) and even education (Shabbir, & Anwar, 2007). It can thus be said that the level of corruption in a country is determined by multiple factors, and that corruption itself can be both a dependent, and independent variable, in an economy.

Audit fees are also determined by a range of factors, as Simunic (1980) concluded. Audit fees are in their nature a reflection of audit effort and audit effort ((Simunic, 1980; Hay, Knechel, & Wong,

2006). Audit fees have been shown in the existing literature to be affected by: the size of a client, the complexity of the audit, the profitability of a firm, and the leverage of a firm (Simunic, 1980; Hay et al., 2006) and the business risk of the firm (Bell, Landsman & Shackleford 2001; Seetharaman, Gul & Lynn 2002). Additionally, audit fees have been shown to differ according to the use of a Big-4 auditor rather than non-Big-4 auditor, with auditors in the Big 4 (KPMG, EY, PwC & Deloitte) charging a premium for their services (Palmrose, 1986; Craswell, Francis, & Taylor, 1995). Premiums from auditors have also been shown to be greater in stricter regimes. A country's litigation environment (that is, the strength of its legal regimes) is a determining factor in the level of audit fees and audit effort (Choi, Kim, Liu, & Simunic, 2009). The cross-listing of companies also increases fees when there is a significant difference between the strength of the legal frameworks between the home country and the foreign country (Choi et al., 2009). This has been further supported by the work of Seetharaman, Gul, & Lynn (2002) who found that UK auditors charged a premium when clients accessed US Markets. Thus, it has been shown across a large number of empirical studies that audit fees are influenced by a range of client based and external factors.

However, to our knowledge the literature on audit fees includes only one study that has linked corruption to audit fees. Lyon & Maher (2005) use a sample of US companies to examine the effect on audit fees of client payments of bribes to foreign government officials and find a 43% audit premium resulting from such payments. The data is from the SEC's programme of voluntary disclosure of such payments before the introduction of the Foreign Corrupt Practices Act 1977 which made such payments illegal. However, because of the small number of companies that disclosed payments of bribes and the paucity of audit fee data in the 1970s the sample comprised just 82 companies for the year 1974. Furthermore, the study examined the impact of known corrupt behaviour and by just US companies. In practice the problem in planning an audit is to consider the procedures that need to be carried out to promote the likelihood of discovery of corruption where it exists. In the absence of known corrupt behavior, the audit plan for corruption is likely to vary with the level of corruption in the country in which the client operates. Thus we investigate corruption as a country level variable impacting on audit fees, which is a new line of research.

In our study, we analyze a sample of 41,628 firm year observations on companies from 24 countries for the period of 1998-2014. We use audit fees – the total fees paid to an auditor in a single calendar year – as the dependent variable. We employ the "control of corruption" index 2014 as created by Kaufmann et al. (2014), which measures the perception of the extent to which

public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture of the state by elites and private interests". This broadens the definition of corruption to include bribery, the state of the unofficial economy, and other forms of corruption. We find in our study a positive relationship between corruption and audit fees, indicating that companies in countries that have a high level of corruption have higher audit fees. The results are strong and robust to sensitivity tests. We include choice of a Big-4 auditor as a control variable jn our tests and examine the effect of corruption on the relationship between choice of a Big-4 auditor and audit fees. We find a positive interaction between corruption and choice of a Big-4 auditor and thus our study also adds to the empirical literature on the Big-4 premium.

The paper proceeds as follows. Section 2 provides an overview of the general theoretical framework of corruption and audit fees and provides the development of our hypotheses for the study. Section 3 provides information regarding the data and variables used and the research models employed. Section 4 reports the main empirical results and our robustness test. Section 5 summarizes the paper, notes the limitations, and indicates additional areas for future study.

2. Theoretical Framework of Corruption and Audit Fees & Hypothesis Development

Corruption involves an initiating entity engaging with a cooperating entity in a scheme whereby (i) the initiating entity receives an economic benefit as a result of the cooperating entity exercising in favour of the initiator, the power or control they hold over a third party's resources, and (ii) the cooperating entity receives a reward from the initiating entity. The net benefit gained by the initiating entity, the reward obtained by the cooperating entity, and the form of the corrupt scheme can all take a variety of forms. Access to goods or services at a reduced price, reduced waiting time for access to goods or services, inflated payments for goods or services supplied, and remission of fines are all common examples of the benefits gained by the initiating entity. A direct share in the benefit granted, periodic payments (in money or kind) from the initiating entity, and advance promotion are all examples of the different rewards gained by cooperating entities. The scheme itself may be as simple as the initiating entity receiving goods at a reduced price per unit or more units than paid for. More complex schemes could involve a powerful politician looting government resources with the tacit cooperation of public servants obtained by positive inducements such as earlier career advancement or negative inducements such as threats against their job or physical security. Although the entity receiving the net benefit generally initiates the

engagement the roles may sometimes reverse. For example, where a public servant suggests to a citizen that if they pay an inducement, they obtain more timely service.

In terms of standard agency theory (Jensen and Meckling, 1976), the initiating entity may be acting as an agent on behalf of a principal or be a principal while the cooperating entity is always an agent for a principal. Initiation of the scheme is expected to benefit the initiating agent's principal or themselves whereas the cooperating agent is rewarded for passing on their principal's resources. Discussion of corruption is often about schemes that involve the property of central or local government. Thus the cooperating agent is typically a government employee or a politician. However, the resources could be the property of a private entity and the cooperating agent provides resources in return for a financial reward or perhaps a political favour such as a high profile public appointment. Furthermore, the source of the benefit may not always be immediately evident. For example a privately owned bank may advance funds to a private entity for a risky project at a less than risk adjusted rate of interest. This may appear to be a concession which places the bank's funds at risk for inadequate reward. However, the bank may provide the advance only because it has an understanding with politicians connected to the borrower that if the project fails that the government will meet any shortfall in the borrower's ability to repay.

To establish a link from corruption to audit fees we adapt the Cressey (1973) *fraud triangle* concept to the context of corruption.[1] Our adaptation conceptualizes corruption as having three elements: *net benefit*, *low risk*, and *rationalization.* The triangle is illustrated in Figure 1 below. The prospect of a net benefit is clearly a fundamental prerequisite for corruption to take place. Unless the initiating agent can see a net benefit they will not offer a scheme. The prospect of a net benefit increases inversely with the size of the reward that must be provided. The reward necessary to achieve cooperation is likely to be smaller the lower is the wealth or income of the potential cooperating agent. Thus countries with low levels of income relative to cost of living will potentially have a higher level of corruption. However, in order for the engagement to take place the environment must be such that there is low risk of penalties for either of the agents. While the number of people in prison in countries around the world for crimes such as embezzlement, theft and burglary is greater than would be expected with rational economic behavior, the proportion of such people in the general population is low and thus in order for corruption to become general

[1] The Cressey (1973) fraud triangle envisages fraud as resulting from the interplay of three elements *pressure* (economic pressure to commit fraud), *opportunity* (to commit fraud), and rationalization (the process of justifying the fraudulent activity despite knowledge of the wrongful nature of the activity).

there must be low risk of penalties resulting from corrupt behaviour. Lack of accountability, poor monitoring mechanisms, weak surveillance, weak enforcement regimes all contribute to low risk of penalties for corrupt behavior and are thus conducive to corruption.

The final element is rationalization. The wrongful nature of corrupt behaviour is self-evident to most agents involved but it is easily rationalized if the behavior is general ("everybody does it") or if it is viewed as a victimless crime (just as with tax evasion, no particular entity suffers directly as a result of the behaviour.

All three elements of the triangle facilitate corruption but they may also be effects of corruption. The prospect of a net benefit is a prerequisite for corruption but in a corrupt society the prospect is also likely to be greater. Low risk facilitate corruption but a corrupt society will also be organized so as to ensure low risk. Rationalization facilitates corruption but in a corrupt society, corrupt behavior will also appear to have legitimacy. The stigma attached to corruption is much less in a corrupt society than in one that is relatively free of corruption.

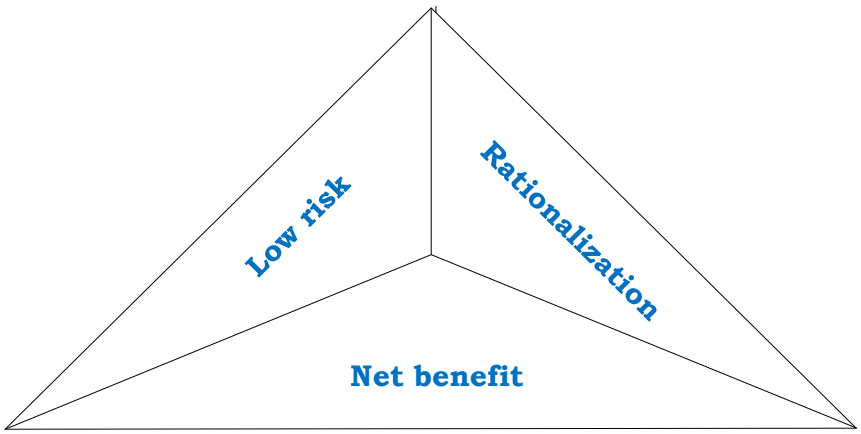

Figure 1: Corruption Triangle

In the context of our paper, we postulate that audit impacts on the second element of the triangle, low risk. Audits increase the likelihood of detection of corruption and thus increase the potential risk of penalties for corruption. The impact of audit in a corrupt country can manifest in three areas, the work of the Supreme Audit Institution in conducting the audit of central and local governments, audit firms auditing private sector entities, and internal auditors working in the public and private sectors.

In this study we focus on the work of audit firms engaged in the audit of companies and we employ the audit fee models commonly employed in the literature and first developed by Simunic (1980). The higher the likelihood of corruption the greater the resources an auditor needs to employ in the audit and the greater the expected losses that will occur from discovered failure to flag corruption. Thus we expect that:

H1: The higher the level of corruption the higher the level of audit fees.

However, as noted above, it is a common empirical finding that Big-4 auditors charge a premium over other auditors (Palmrose (1986; Craswell et al 1995). We are thus interested in the impact of corruption on audit fees where a firm employs a Big-4 auditor. Given our hypothesis that corruption lead to increased audit fees and given the factors that operate to explain the Big-4 premium, we expect that:

H2: The higher the level of corruption the higher the effect on audit fees of hiring a Big-4 auditor.

While our hypotheses reflect the expectation that an audit conducted in circumstances warranting concern for the presence of corruption will result in a fee premium, there is actually limited guidance in the authoritative literature to guide auditors in respect of corruption. Kassem & Higson (2016) note that while audit regulators have addressed the question of fraud at length, the attention given to corruption has been minimal. Neither the standards of the International Auditing and Assurance Standards Board (IAASB) nor the standards of the national regulators on audit in the US and elsewhere have made "a direct reference to auditors' responsibilities with regards to corporate corruption" (p3). Kassem and Higson (2016) recommend that audit standards should "clearly state that " external auditors are responsible for detecting material misstatement s due to corruption and that they are required to assess and respond to corruption risks"" (p7). The IAASB has recently issued a revised IAS 250 *Consideration of Laws and Regulations in an Audit of Financial Statements* (October 2016) which addresses the auditor's responsibilities to consider the legal and regulatory framework that an entity is subject to. The standard explains that the relevant laws and regulations may include those relating to fraud, corruption and bribery but the standard is not specific to that component of the framework.

Our sample is from a range of countries with different but significant levels of perceived corruption. Using a cross country sample allows control not just for firm specific variables but also country-specific variables such as such institutional arrangements, political structures and different forms of regulation and legal requirements. This is very important because each country can have different setting and histories that can help to explain why they are corrupt. In Uganda, it was discovered that firm growth was correlated negatively with bribery (Fisman, & Svensson, 2007) and it was discovered that those countries in the former socialist sphere of influence of the USSR (Russia and the Ukraine) have higher levels of bureaucratic corruption in hiding output (Johnson, Kaufmann, McMillan, Woodruff, 2000). It is important that these factors be controlled for in testing for the impact of corruption on audit fees. Previous studies linking perceived corruption to other factors have also utilized country-level data to support their findings (Malagueno, 2010, Houqe et al., 2015). Additionally, we sought to provide context for corruption and therefore used a sample covering a 16-year period, to control for temporal variation in macroeconomic factors such as inflation, unemployment and growth.

3. Research Method and Data

3.1. Test Methodology

Our test model for audit fees builds on the models within the existing literature including those of Simunic (1980). In simple terms, the model reflects the cost of the resources used, the losses that could occur from an audit failure, and includes firm specific and country level controls. The model is stated in equation (1):

$$LN\_FEES_{it} = \beta_0 + \beta_1 CORRUP_j + \beta_2 BIG\text{-}4_{it} + \beta_3 LN\_TA_{it} + \beta_4 LEV_{it} + \beta_5 LOSS_{it} + \beta_6 INV\_REC_{it} + \beta_7 INT_{it} + \beta_8 ISSUE_{it} + \beta_9 ROA_{it} + \beta_{10} LITIG_{it} + \beta_{11} SEG_{it} + \beta_{12} R\_LAW_j + \beta_{13} LN\_FDI_j + \beta_{14} DIS_j + fixed\ effects + \varepsilon \quad (1)$$

where,

LN_FEES_{it}	= Natural log of audit fees.
$CORRUP$	= Corruption as measured on the Kaufmann Index.
BIG_4_{it}	= A dummy variable =1 if the firm uses a Big-4 Auditor.
$CORRUP_j*BIG\text{-}4_{it}$	= The Joint effect of corruption and use of a Big-4 auditor.
LN_TA_{it}	= Natural log of total assets of a firm.
LEV_{it}	= Year-end total liabilities over total assets.
$LOSS_{it}$	= Performance.
INV_REC_{it}	= Sum of Year-end inventories and receivables over total assets.
INT_{it}	= A dummy variable =1 if the firm had foreign sales during the year.

$ISSUE_{it}$ = A dummy variable = 1 if the firm issued shares or debentures during the study period

ROA_{it} = Year-end net income over total assets.

$LITIG_{it}$ = Litigation risk.

SEG_{it} = Number of business segments.

R_LAW_j = Rule of law

LN_FDI_j = Natural log of foreign direct investment.

DIS_{it} = Disclosure as ranked by the World Bank index

Each of the variables is defined in detail inTable 1.

The controls that we used in our study included: auditor, total assets, leverage, performance, audit complexity, foreign sales, share or debenture issue, profitability, litigation risk, segments, rule of law, foreign direct investment (FDI) and disclosure. There are several reasons for each of these controls being included in our study.

Firstly, we include auditor in our study to control for the effects of the Big-4 Audit Premium, as this can be seen from our literature review to increase the amount of audit fees. Other studies have noted this as an important factor in fee increases (Palmrose, 1986; Craswell et al., 1995). In our study where a Big 4 auditor has been used we denote this with a value of 1; a non-Big 4 auditor is denoted by 0.

Total assets, leverage, performance, audit complexity, foreign sales, share issue, profitability and segments have been included as controls in our study as they have been indicated by a number of studies to be important factors in determining audit fees (Simunic 1980; Hay et al., 2006). By controlling for these factors we are better able to test for a link between audit fees and corruption.

Rule of law measures the extent to which agents have confidence in and abide by the rules of society, and in particular, the quality of contract enforcement, the police, and the courts, as well as likelihood of crime and violence. We use this variable as a proxy for differences across countries in economic, institutional, and regulatory factors.

Lastly, foreign direct investment and disclosure are our last two controls. There have been a number of recent studies that review the rate of IFRS adoption and perceived corruption. In

countries with high perceived corruption – as shown in the introduction and literature review parts of this paper – high corruption leads to lower FDI. Where countries have stronger accounting and audit quality controls, the World Bank is more likely to increase loans to these countries (Lamoreaux, Michas, & Schultz, 2014) and as perceived corruption decreases with the increased length of IFRS adoption (Houqe et al., 2015) increased foreign direct investment will occur (Cuervo-Cazurra, 2006). Similarly, increased disclosure has been shown to increase confidence in investor sentiment and decrease perceived corruption (Houqe et al., 2015). We have thus added in these controls to determine whether levels of foreign direct investment and disclosure can have an indirect, and direct (respectively) effect on audit fees.

Our main test variable, corruption, was obtained from the Control of Corruption 2014 report (Kaufmann et al, 2014), an index which reflects the extent to which public power is exercised for private gain while covering petty and grand forms of corruption. The reported values run from -2.5 to +2.5 and increase with decreasing level of corruption. Therefore, for ease of interpretation of the test results, we multiplied the reported values by negative 1, thus ensuring that if audit fees increase with increasing corruption this would be reflected in a positive coefficient on the corruption variable. We used Bloomberg to obtain information on audit fees, auditor type, total assets, leverage, performance, audit complexity, foreign sales, share or debenture issues, profitability, litigation risk and business segments. Rule of law was obtained from Kaufman et al (2014). The index runs from -2.5 to +2.5 and increases with increasing quality of rule of law. Thus, as with the corruption index, the reported values were multiplied by negative 1. Information on Foreign Direct Investment and disclosure was collected from the World Bank 2014 report.

To examine the robustness of our primary test results we reran the test with an alternative measure of corruption, the Corruption Perceptions Index issued by Transparency International. The index runs from 0 to 100 and increases with decreasing corruption. Thus the reported values were adjusted to [100 less reported value]. We also reran the primary test with GDP (from the World Bank 2014 report), a proxy for stage of economic development, as a substitute for the rule of law variable.

3.2. Sample selection

Our initial sample included data on 48 counties for which data on corruption and financial variables was available. In order to ensure that our data was on countries with significant corruption we ranked the countries in terms of the level of corruption and selected to work with the 24 counties with the highest level of corruption. This gave 107,750 firm year observations. We then deleted observations with missing value on any of the test variables, which left 45,870 observations. We then excluded 2,520 firm year observations on finance, insurance and real estate companies (SIC codes of 6000-6999), thus reducing the number of observations to 43,350. Finally we excluded the extreme values (top or bottom 1%) to result in the final sample of 41,628 observations. The process is summarized in Table 2, Panel A.

Table 2, Panel B, shows that out of our 41,628 firm year observations, 9926 (24%) come from South Korea. India, China, Brazil and Thailand were the next highest in descending order with 7,278, 7,191, 2,711, 2, 066 firm year observations respectively. The three lowest number of observations came from Venezuela, Ecuador, and Columbia with 96, 147, and 207 firm year observations respectively.

Our sample reflects a range of countries with varying rates of economic growth, level of perceived corruption and market-orientation which helps to increase the strength of our results. The use of a 16 year period allows each country to be viewed as a separate entity while at the same time controlling for country-specific variation in economic growth, prosperity and development within the period. The analysis thus accommodates country-specific recessions – as many of the countries have had at different periods during the last 16 years – while also controlling for periods of higher economic growth.

4. Results

4.1. Descriptive statistics

Table 2, Panel C, shows the full set of descriptive statistics for the firm-level variables of Mean, Median, Standard Deviation and the minimum and maximum value of each variable. The total audit fees, *LN_FEE*, has a mean value of 4.9865, similar to the median value of 4.7042 and has a range from 1.7312 to 9.2568. Corruption, on the Kaufmann index has a mean of 0.3524 and there is a range from -1.0600 to 1.4900. The Big 4 variable ranges from 1 where Big 4 Audit firms are employed to 0 where they are not. The mean is 0.4652 indicating that for 46.52% of the observations a Big-4 auditor was employed.

4.2. Correlation Matrix

Table2, Panel D, shows the correlation matrix for the full set of variables. The correlation between *CORRUP* and *LN_FEE* is 0.326 and is statistically significant at the 1% level. This indicates that corruption and audit fees are positively associated and this is suggestive of support for H1. Furthermore, the correlation between the employment of a *Big-4* and *LN_FEE* is 0.187 and also significant at the 1% level. This suggests support for the existence of the Big-4 audit premium. However, these indications are from a univariate perspective and both the effect of corruption on audit fees and the existence of a Big-4 premium should of course be assessed in a multivariate context. We tested for multicollinearity but the results were negative.

4.3. Main Results

The key question of our study is whether corruption has a positive impact on audit fees. Table 3 reports the results of weighted least squares regression estimation of our test model. The adjusted R^2 has a value of 81.46% and the coefficients on all variables have the expected sign and are statistically significant. The model thus has a good fit. In particular, the coefficient on corruption is positive and is significant at the 1% level. Thus evidence supports H1 that corruption has appositive impact on audit fees. The coefficient on Big-4 is also positive and significant. This supports the existence of a Big-4 premium. Furthermore, the coefficient on the interaction term, *CORRUP* BIG-4*, is also positive and significant, thus indicating support for H2 that the higher the level of corruption the higher the effect on audit fees of hiring a Big-4 auditor. Allowing for the fact that audit fees are measured in natural log form, the impact of corruption (measured at the mean) is 0.65%. The impact of hiring a Big-4 auditor is to increase audit fees by 28.94%. The presence of corruption (measured at the mean) increases the premium to 29.74%. Thus there is significant premium to be paid for hiring a Big-4 auditor but the additional cost to specifically reflect corruption is significant but small.

4.4 Robustness Tests

Table 4 reports the results of the robustness test where the Transparency International Corruption Perception index is used as substitute for the Kaufmann Control of Corruption index. The results are qualitatively similar to the main results.

Table 5 reports the results of the robustness test where GDP is used as a substitute for the Rule of Law variable. The results are again qualitatively similar to the main results.

The main results are thus robust to two significant sensitivity tests.

5. Conclusion

The objective of our study was to examine the impact of corruption on audit fees. This is a "missing-link" in the literature and our objective was to fill this gap. We based our analysis on a sample of 41,268 firm year observations firm year observations on companies operating in 24 countries between 1998 and 2014 with corruption measured by the Kaufmann corruption index and the other test information collected from Bloomberg, and the World Bank statistics. We employed an audit fee model which reflects the cost of the resources used in an audit, the losses that could occur from an audit failure, and includes firm specific and country level controls. Our evidence indicates that corruption has a positive impact on audit fees and that the presence of corruption adds a significant but small amount to the large premium that is paid in corrupt countries for hiring a Big-4 auditor. Furthermore, the evidence reflects a large global sample drawn over a relatively long period of time and is robust to two significant sensitivity tests.

Our study however does have some limitations. Firstly, there is the possibility of omission of relevant variables from the test model. In particular we have not included a variable for culture. Secondly, we have used a single equation model and have therefore not addressed the possibility of endogeneity. Finally, data constraints result in omission from the sample of countries from the previous USSR.

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Appendix

Table 1: Description of variables and data sources.

Variable	***Measure***	***Description of variable***	***Data source***
Dependent variable			
Audit Fees	*LN_FEEE*	Natural log of total fees paid to the auditor for year *t*.	Bloomberg
Independent variable			
Corruption	*CORRUP*	The Kaufman et al (2014) "Control of corruption" index. This index measures the perception of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture of the state by elites and private interests." The index is expressed in standard normal units ranging from around -2.5 to 2.5 with the countries ranked from most corrupt to least corrupt. For simplicity in interpreting the results of estimation of the test model we multiplied the reported values by negative 1.	Kaufmann et al (2014)
Control variables			
Auditor	*BIG_4*	Dummy variable = 1 if the auditor is a Big-4 auditor (Deloitte, EY, KPMG, and PwC) and 0 otherwise.	Bloomberg
Total assets	*LN_TA*	Natural logarithm of total assets of a firm at time *t.*	Bloomberg
Leverage	*LEV*	LEV is the year-end total liabilities over total assets of a firm at time *t.*	Bloomberg
Performance	*LOSS*	A dummy variable = 1 if firm *i* in year t reports negative income before extraordinary items and 0 otherwise.	Bloomberg
Audit complexity	*INV_REC*	The sum of year-end inventories and receivables over total assets of a firm in time *t.*	Bloomberg

Foreign Sales	*INT*	A dummy variable = 1 if the firm has foreign sales in year *t*, and 0 otherwise.	Bloomberg
Share or debenture issue	*ISSUE*	A dummy variable = 1 if the firm issue shares or debentures during the study period and 0 otherwise.	Bloomberg
Profitability	*ROA*	Net income for year *t* over total assets of a firm at time *t.*	Bloomberg
Litigation risk	*LITIG*	Dummy variable = 1 if the company belongs to the following industry groups: Bio-Technology (SIC 2833 TO 2836), Computer Hardware firms (SIC 3570 to 3577), Electronics (SIC 3600 to 3674), Retailing (SIC 5200 to 5961), and Computer software (SIC 7371 to 7379) (Gong, Li, and Xie 2009), 0 otherwise.	Bloomberg
Segments	*SEG*	Number of business segments of a firm at time *t.*	Bloomberg
Rule of Law	*RLAW*	Measures the extent to which agents have confidence in and abide by the rules of society, and in particular, the quality of contract enforcement, the police, and the courts, as well as likelihood of crime and violence. The index is expressed in standard normal units ranging from around -2.5 to 2.5 with higher scores indicating stronger rule of law. For simplicity in interpreting the results of estimation of the test model we multiplied the reported values by negative 1.	Kaufmann et al., 2014
Foreign direct investment	*LN_FDI*	Natural log of foreign direct investment.	The World Bank, 2014
Disclosure	*DISC*	Measures the extent of disclosure in protecting minority shareholders through transparency and disclosure of related-party transactions. The index ranges from 0 to 10 with higher scores indicating greater disclosure.	Doing Business Report, The World Bank, 2014

Table 2

Panel A: Sample selection

Number of firm year observations for companies from 24 counties for 1998-2014	107,750
Less: Missing values on dependent and independent control variables	61,880
	45,870
Less: excluding SIC 6000-6999	2,520
	43,350
Less: variables registering in the top or bottom 1%	1,722
Final Sample	**41,628**

Panel B: Sample distribution by country

	Country	Firms	Firm years	CORRUP (median)
1	Argentina	102	1,235	0.4584
2	Bangladesh	34	664	1.0255
3	Brazil	426	2,711	0.0462
4	China	547	7,191	0.5297
5	Colombia	64	207	0.2971
6	Czech Republic	92	377	-0.3055
7	Ecuador	42	147	0.8093
8	Egypt	52	962	0.5541
9	Greece	72	436	-0.2529
10	India	452	7,278	0.4274
11	Indonesia	74	486	0.7788
12	Italy	28	314	-0.2783
13	Korea South	598	9,926	-0.4690
14	Malaysia	112	1,248	0.2791
15	Mexico	47	468	0.2967
16	Nigeria	32	224	1.1299
17	Pakistan	38	482	0.9297
18	Peru	32	312	0.3222
19	Philippines	46	428	0.5852
20	South Africa	42	562	-0.1876
21	Thailand	158	2,066	0.3021
22	Turkey	25	354	-0.0039
23	Venezuela	32	96	1.0693
24	Vietnam	72	862	0.5768

Panel C: Descriptive statistics for firm-level variables

Variable	Mean	Median	S.D	Minimum	Maximum
LN_FEE	4.9865	4.7042	1.4256	1.7312	9.2568
CORRUP	0.3524	0.3948	0.4998	-1.0600	1.4900
BIG_4	0.4652	1.000	0.5249	0.0000	1.0000
LN_TA	9.1021	8.9000	1.8974	3.2587	14.9025
LEV	0.4987	0.4750	0.3989	0.0577	0.7158
LOSS	0.4268	0.0000	0.4510	0.0000	1.0000
INV_REC	0.2998	0.2850	0.2191	0.0000	0.8674
INT	0.1078	0.0000	0.1398	0.0000	1.0000
ISSUE	0.1056	1.0000	0.1000	0.0000	1.0000
ROA	-0.0865	0.0100	0.0489	-1.1970	0.2242
LITIG	0.2610	0.0000	0.3112	0.0000	1.0000
SEG	0.4698	0.0000	0.3941	0.0000	2.3978
R_LAW	0.2657	0.3953	0.6449	-1.1400	1.8900
LN_FDI	22.5989	22.4500	1.5575	16.95	26.40
DISC	5.8510	6.0000	2.6739	1.0000	10.0000

All variable definitions appear in Table 1.

Panel D: Correlation Matrix

	LN_FEES	*CORRUP*	*BIG_4*	*LN_TA*	*LEV*	*LOSS*	*INV_REC*	*INT*	*SSUE*	*ROA*	*LITIG*	*SEG*	*R_LAW*	*FDI*	*DISC*
LN_FEE	1														
CORRUP	0.326***	1													
BIG_4	0.187***	0.008	1												
LN_TA	0.657***	0.007	0.214***	1											
LEV	0.221***	0.072***	-0.136*	-0.037***	1										
LOSS	0.189***	0.126***	-0.149***	-0.285***	0.142***	1									
INV_REC	0.217***	0.192***	0.056*	-0.124**	0.127***	-0.189**	1								
INT	0.019*	-0.010	0.248***	0.192**	-0.011	-0.195***	0.190***	1							
ISSUE	0.191*	0.018	0.187**	0.181**	0.310***	0.011	0.039	0.308***	1						
ROA	0.218**	-0.116**	0.128**	0.301**	-0.324**	-0.328***	0.298***	-0.125**	0.051***	1					
LITIG	0.009	0.001	0.119**	0.000	0.017*	0.187***	0.031***	-0.129**	-0.127**	0.006	1				
SEG	0.192**	0.210***	0.201***	0.151**	0.179***	0.192***	0.112**	-0.081**	-0.147**	0.051**	-0.089***	1			
R_LAW	0.682***	0.482**	0.031***	0.069**	0.061***	0.152**	-0.082***	-0.080**	0.329**	0.167**	0.159***	-0.091***	1		
FDI	-0.210***	-0.156**	0.058***	-0.039***	-0.051**	-0.086***	0.186***	0.211**	0.218**	-0.197**	0.179**	0.3017**	-0.090***	1	
DISC	-0.189***	-0.119**	-0.050***	0.020***	0.025**	0.197***	0.159**	0.179**	0.198**	0.045	0.169***	0.167**	0.117***	0.072**	1

Note: All variable definitions appear in Table 1. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3: Weighted Least squares regression results for full sample

$LN\_FEES_{it} = \beta_0 + \beta_1 CORRUP_j + \beta_2 BIG\_4_{it} + \beta_3 CORRUP_j * BIG\_4_{it} + \beta_4 LN\_TA_{it} + \beta_5 LEV_{it} + \beta_6 LOSS_{it} + \beta_7 INV\_REC_{it} + \beta_8 INT_{it} + \beta_9 ISSUE_{it} + \beta_{10} ROA_{it} + \beta_{11} LITIG_{it} + \beta_{12} SEG_{it} + \beta_{13} R\_LAW_j + \beta_{14} LN\_FDI_j + \beta_{15} DIS_j + fixed\ effects + \varepsilon$

	Coefficients
Intercept	18.2412***
	(8.1254)
CORRUP	0.0184***
	(6.984)
BIG_4	0.2542***
	(8.3247)
*CORRUP*BIG_4*	0.0175***
	(6.1258)
LN_TA	0.5879***
	(19.3245)
LEV	0.1378***
	(5.0124)
LOSS	0.1016*
	(1.7245)
INV_REC	0.6452***
	(5.1242)
INT	0.3192**
	(2.8254)
ISSUE	0.0652**
	(2.6872)
ROA	0.2245***
	(7.5421)
LITIG	0.2058**
	(1.821)
SEG	0.1421***
	(5.9000)
R_LAW	0.4287***
	(14.7890)
LN_FDI	-0.0189*
	(1.8452)
DISC	-0.0892*
	(1.7254)
Fixed Effects	Included
Number of observations	41,268
Adjusted R^2	0.8146

Note: Coefficient *p*-values are two-tailed and robust to heteroscedasticity and firm clustering effects using the method in Rogers (1993).

All variable definitions appear in Table 1. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4: Weighted Least squares regression results for alternative proxy for corruption (CPI index)

$$LN\_FEES_{it} = \beta_0 + \beta_1 CPI_j + \beta_2 BIG\_4_{it} + \beta_3 CORRUP_j * BIG\_4_{it} + \beta_4 LN\_TA_{it} + \beta_5 LEV_{it} + \beta_6 LOSS_{it} + \beta_7 INV\_REC_{it} + \beta_8 INT_{it} + \beta_9 ISSUE_{it} + \beta_{10} ROA_{it} + \beta_{11} LITIG_{it} + \beta_{12} SEG_{it} + \beta_{13} R\_LAW_j + \beta_{14} LN\_FDI_j + \beta_{15} DIS_j + fixed\ effects + \varepsilon$$

	Model 1
Intercept	22.5341***
	(11.2451)
CPI	0.0201***
	(7.1024)
BIG_4	0.2498***
	(8.9245)
*CPI*BIG_4*	0.0181***
	(8.1245)
Firm level controls	Included
Country level controls	Included
Fixed Effects	Included
Number of observations	41,268
Adjusted R^2	0.8240

Note: Coefficient *p*-values are two-tailed and robust to heteroscedasticity and firm clustering effects using the method in Rogers (1993).

All variable definitions appear in Table 1. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Weighted Least squares regression results for full sample with GDP

$LN\_FEES_{it} = \beta_0 + \beta_1 CORRUP_j + \beta_2 BIG\_4_{it} + \beta_3 CORRUP_j * BIG\_4_{it} + \beta_4 LN\_TA_{it} + \beta_5 LEV_{it} + \beta_6 LOSS_{it} + \beta_7 INV\_REC_{it} + \beta_8 INT_{it} + \beta_9 ISSUE_{it} + \beta_{10} ROA_{it} + \beta_{11} LITIG_{it} + \beta_{12} SEG_{it} + \beta_{13} GDP_j + \beta_{14} LN\_FDI_j + \beta_{15} DIS_j + fixed\ effects + \varepsilon$

	Model 1
Intercept	19.1243***
	(8.2542)
CORRUP	0.0187***
	(7.2456)
BIG_4	0.2514***
	(7.9854)
*CORRUP*BIG_4*	0.0174***
	(6.1000)
Firm level controls	Included
Country level controls	Included
Fixed Effects	Included
Number of observations	41,268
Adjusted R^2	0.8295

Note: Coefficient *p*-values are two-tailed and robust to heteroscedasticity and firm clustering effects using the method in Rogers (1993).

All variable definitions appear in Table 1. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively