HARVARD | BUSINESS | SCHOOL

DOCTORAL PROGRAMS |

DISSERTATION ACCEPTANCE CERTIFICATE

(To be placed in First Library Copy)

The undersigned, approved by the Chair of the Doctoral Programs, have examined a dissertation entitled

Strategies for the Non-Market Environment

presented by Andrea Read Hugill

candidate for the degree of Doctor of Business Administration and hereby certify that it is worthy of acceptance.

Signature Jordan Siegel .....

Jordan I. Siegel *Chair*

Signature Juan Alcácer .....

Juan Alcácer

Signature .....

Dennis A. Yao

Date April 10, 2015 .....

WYSS | SOLDIERS FIELD | BOSTON, MA 02163 | Ph 617.495.6101 | Fx 617.496.2203 | doctoralprograms@hbs.edu | GEORGE F. BAKER FOUNDATION

Strategies for the Non-Market Environment

A dissertation presented

by

Andrea Read Hugill

to

the Harvard Business School Strategy Department,

as represented by Jordan I. Siegel, Juan Alcacer, and Dennis A. Yao, in

in partial fulfillment of the requirements

for the degree of

Doctor of Business Administration

in the subject of

Strategy

Harvard University

Cambridge, Massachusetts

April, 2015

Table of Contents

Political Risk, Knowledge, and Strategy

Andrea Hugill
Harvard Business School

ABSTRACT

This paper examines whether mobile telecom operators with access to different kinds of knowledge pursue different strategies in politically risky markets. Using data from 2000-2010 I find that firms with country-specific knowledge, gained via presence in the local market, and general knowledge, gained through a long history of operations, were more likely to increase or maintain investment and operations even as political risk rose to the highest levels while peer firms drop both investment and operations. Firms with market-risk knowledge, gained through previous experience confronting political risk, drop investment similar to peer firms but increase operations to capitalize on their short-term competitive advantage. Therefore, country-risk knowledge and general knowledge are associated with strategies that are durable to political risk, while market-risk knowledge is associated with the distinct strategy for political risk of increased operations. These results contribute to the literature by documenting distinct market-based strategies for firms with differing knowledge sets that remain in a market as political risk rises.

Academics and managers alike have exhibited increasing interest in how political risk affects firm activities (see Kobrin, 1979, and Fitzpatrick, 1983, for reviews). Political uncertainty and turmoil have always influenced firm performance, but managers are finding new ways to adapt to, avoid, or capitalize on market heterogeneity in recent decades (Branzei and Abdelnour, 2010; Henisz and Zelner, 2003). Scholarly work on political risk has largely focused on foreign direct investment (FDI) as it enters or exits markets. This work has thoroughly evaluated whether FDI will enter risky markets (Holburn and Zelner, 2010; Henisz and Macher, 2004; Kobrin, 1978), when it will exit risky markets (Mata and Freitas, 2012), and what mode of entry foreign investors tend to choose when entering risky markets (Siegel, Licht, and Schwartz, 2011, 2013; Henisz, 2000; Brouthers, 1995; Kogut and Singh, 1988). FDI entry/exit and entry-mode decisions, however, do not capture the variety of strategies that firms implement to deal with political risk. Firms already established in markets may remain in place as political risk fluctuates, often because of high entry barriers and substantial local fixed assets.

Limited understanding exists as to how firms navigate elevated political risk on an ongoing basis. Prevailing understanding of such strategies focuses largely on the relationships firms build with local governments and stakeholders (Holburn and Vanden Bergh, 2004, 2008; Bonardi, Hillman, and Keim, 2005; Henisz and Zelner, 2004). These relation-based strategies lead to a variety of performance and regulatory benefits, but they do not provide understanding of the market-based strategies for dealing with political risk. Industry publications typically limit the firms' options to exiting a market, boosting security at facilities, and diversifying a portfolio. Political risk insurance is also an option, but one that is not commonly used by the majority of firms. Understanding how firms may adjust market-based activities such as investment and

operations as part of a strategic response to political risk is generally lacking. This study seeks to fill this gap in the literature.

Political risk is generally thought to have a dampening effect on growth and firm activity (Alesina, 1996; Henisz, 2000). I identify several categories of knowledge that moderate this relationship: country-specific knowledge, general knowledge, and market-risk knowledge. Firms with country-specific knowledge possess familiarity with local institutions and access to local networks, particular to a market, through accumulated experience in that market. Firms with general knowledge possess experience adapting to a variety of changes, gained through accumulated experience existing as an organization. Firms with market-risk knowledge have increased familiarity with the dynamics of operating in politically risky settings, gained through accumulated experience navigating political risk in that market or others.

I find that firms with country-specific or general knowledge were more likely to maintain or slightly increase long-term investment and maintain operations, relative to their peer firms who decrease investment, as political risk rose to the highest levels. Firms with market risk knowledge were more likely to decrease long-term investment along with peer firms who lacked market risk knowledge, but capitalize on their political risk experience and increase operations as political risk rose to the highest levels. Firms with market-risk experience increase only operations, because it is a short-term tool that can be turned on as political risk rises and off as it drops, rather than investment, which happens on a longer time span. These different choices suggest the importance of accumulated past experience and associated knowledge when firms determine strategy in risky markets. Country-specific knowledge and general knowledge encompass information necessary to survive uncertain periods in political risky markets and

market risk knowledge involves information with potential for superior performance and opportunistic behavior.

Scholars and managers alike will find value in this study's contribution to understanding how firms with distinct knowledge pursue diverging strategies in the presence of political risk. To my knowledge, this is the first study to compare country-specific, general, and market risk knowledge for purposes of understanding the market-based strategies. I provide insight into the range of market-based choices firms make as political risk rises and fall, showing that firms were not constrained or forced to limit their activities until political risk subsides. On the contrary, firms chose to maintain their course even as political risk rises or possibly treat political risk as an opportunity and expand operations to capitalize on short-term knowledge benefits.

I use both quantitative and qualitative data to explore how different types of knowledge influence firm behavior in the face of political risk. My quantitative data analysis applies mixed methods to a quarter-level panel dataset of 202-227 mobile telecommunications operators in 102-104 countries during 2000–2010. A large portion of this data was used previously used in Alcacer and Perkins (2009)[1]. The data includes the long-term investment decisions of these operators (captured in their capital expenditures) and the operations decisions (captured in their operating expenditures). This quantitative data is supplemented by qualitative data in the form of a series of interviews with managers at mobile telecom operators. In the aggregate, these managers have experience working throughout the Persian Gulf countries, North Africa, Sub-Saharan Africa, Latin America, the Levant, and Southeast Asia; they include individuals who have faced the highest levels of political risk, including revolution and civil war.

[1] The term operator is used here to refer to country-level subsidiaries of owner groups such as AT&T and their domestic competitors.

LITERATURE REVIEW AND HYPOTHESES

Political Risk and Strategy

Political risk encompasses the potential for social, business, and political institutions businesses face to shift as a result of political conditions. Butler and Joaquin (1998) characterize political risk as the possibility of change in government policy and/or institutions. Conceptions of political risk generally capture the spectrum of risk, from mild risk in the form of corruption and political protests to extreme risk in the forms of civil war or cross-border conflict. This understanding of political risk also includes societal and legal risks (Brink, 2004; Howell, 2001). As such, political risk is distinct from policy risk, which describes the risk of local government policies changing (Henisz, 2000). Political risk, as it is used in this study, subsumes policy risk as well as the larger range of factors political risk entails.

Social, political, and other non-market changes arising from political turmoil have negative consequences for most businesses operating in a given market, typically by raising costs and increasing uncertainty (Klapper, Richmond, and Tran, 2013; Guidolin and La Ferrara, 2007; Alesina et al, 1996). Political unrest and uncertainty generally has a dampening effect on economic growth and investment. The same trend should be the case in the telecommunications industry. The nature of political institutions significantly affects investment in a variety of industries (Bergara, Henisz, and Spiller, 1998), including the telecommunications industry (Henisz and Zelner, 2001), as well as firm performance (Bonardi, Holburn, and Vanden Bergh, 2006). The performance effects of local institutions often differ for local businesses and foreign, or multinational business (Klapper, Richmond, and Tran, 2013; Desai, Foley, and Forbes, 2004; Moran, 1974). Businesses can sometimes mitigate these effects by adapting to the changing

institutions successfully in a variety of ways (Henisz, Dorobantu, and Nartey, 2011; Click and Weiner, 2010; Bonardi, Hillman, and Keim, 2005).

Prior work on firm strategy and political risk in the non-market domain documents the positive performance benefits of building relationships or currying favor with local stakeholders and governments (Holburn and Vanden Bergh, 2004, 2008; White et al., 2014; Oetzel and Getz, 2012; Kim, Pantzalis, and Park, 2012). Pursuing and then nurturing relationships with important local agents generally aims to turn adversarial governments into allies and create a local network of connections (Holburn and Vanden Bergh, 2008; Luo and Zhao, 2013). Firms may also opt for a governance structure that intertwines their fate with that of the government, perhaps via a joint venture or other specialized regulative structure (Henisz and Zelner, 2004). Positive relationships with local governments or stakeholders can lead to favorable regulatory policies, access to insider information, security during a crisis, and financial performance benefits (White et al., 2014; Kim, Pantazalis, and Park, 2012). Firms can also minimize their exposure to risk by working to ease local conflict, whether directly by, say, mediating conflict resolution between parties, or indirectly by, for example, cutting ties with human rights violators (Hillman and Hitt, 1999; Oetzel and Getz, 2012). Engaging local stakeholders earns firms local support, which benefits firms' performance (Henisz, Dorobantu, and Nartey, 2011). Local stakeholders' support enables firms to both head off and resolve brewing conflict that could impact business in the future and to receive positive financial benefits in the present (Bonardi, Hillman, and Keim, 2005; Oetzel and Getz, 2012; Keillor, Wilkinson, and Owens, 2005).

Market-based strategies for dealing with financial risk have previously been explored. While financial risk is distinct from political risk and the two forms of risk often move separately, local events can possibly affect both forms of risk. Studies of financial risk find that

firm size and internal capital resources, among other attributes, help firms outperform their competitors (Alfaro and Chen, 2011; Antras, Desai, Foley, 2009). Large multinational firms are relatively less vulnerable to financial risk because they are less dependent on external financing and can rely on internal capital markets and investment flows when limits are placed on local capital (Tong and Wei, 2009; Antras, Desai, and Foley, 2009; Desai, Foley, and Forbes, 2004). Less dependence on external financing is also important for entrepreneurs in post-conflict situations: access to capital allows wealthy individual entrepreneurs to bounce back more strongly and earlier than poor entrepreneurs (Demirguc-Kunt, Klapper, and Panos, 2011). Firms that remain in markets during periods of elevated financial risk may also benefit from organizational structures that can dampen the effects of risk. For example, a vertically integrated firm weathers financial shocks better because internal demand from the parent firm mitigates negative demand shocks in the local market (Alfaro and Chen, 2011). Similar analyses of market-based strategies for coping with political risk, however, remain limited and connections to firms' knowledge have not been explored.

Knowledge

Firms contain unique knowledge as a valuable resource, and arguably exist as superior means of transferring tacit knowledge and know-how (Kogut, 2008; Szulanski, 1996; Spender, 1996; Kogut and Zander, 1992). These unique benefits are especially important in the multinational context, when capitalizing on valuable knowledge sets in distinct national and institutional settings is especially difficult (Gupta and Govindarajan, 2000). When firms can successfully build valuable knowledge resources, they can translate that knowledge into competitive advantages (Argote and Ingram, 2000). While some work has shown that experience and the associated knowledge are not always beneficial (Mukunda, 2012), previous work on

navigating unique institutional environments, emerging economies, and political risk specifically the benefits from previous experience in those setting are far more important. International business and strategy research has explored several categories of knowledge that confer competitive advantage. Though not specifically named as such, country-specific knowledge, general knowledge, and market risk knowledge are related to the categories of knowledge already well recognized in the literatures.

Superior knowledge, relative to peer firms, may be of particular benefit during periods of elevated political risk. Weak institutional settings make knowledge fluid, opaque, and difficult to access by, for example, imposing restrictions on the press (Morck, Yung, Yu, 2000). Emerging markets are one example of a weak institutional context in which opaque information can damage a business' competitiveness. Lacking personal connections to local officials or knowledge of local norms surrounding bribery, for example, foreign managers are apt to face additional challenges when competing with locals. Periods of political risk are another setting where the quality of institutions drops and country-specific knowledge would be particularly beneficial. When knowledge is opaque during periods of political risk, accurate, complete, and timely information about unfolding events may be hard to access. Uncertainty about local events can also be coupled with uncertainty about what to do. Firms with little experience surviving change in weak institutional settings will lack knowledge of successful strategies for navigating the uncertainties around them. Therefore the null hypothesis for both investment and operations is that firms will maintain or decrease their activities as political risk rises.

Country-Specific Knowledge

Country-specific knowledge is the knowledge available to firms that have accumulated experience operating in a market, relative to their foreign entrant counterparts. Country-specific knowledge, or the knowledge local firms possess, is typically addressed in the context of the "liability of foreignness" faced by foreign multinational corporations when entering geographically distant markets. Hymer (1960) was the first scholar to observe foreign entrants struggling to adapt to local cultures, navigate local regulations, and access useful networks, among other challenges. A number of subsequent papers have analytically confirmed that foreignness and newness in a market have negative implications for performance (Mata and Freitas, 2012; Choe, Kho, and Stulz, 2005; Dvorak, 2005; O'Grady and Lane, 1996). Firms with country-specific knowledge do not face these same challenges. Local firms, created within the operating market, have immediate access to local knowledge. Foreign firms can buy or acquire this knowledge through hiring, working with local partners, and gaining experience operating in a market (Baik et al., 2013; Mezias, 2002; Zaheer, 1995). Increasing experience and exposure improves foreign firms' familiarity with a market's language, culture, and regulatory structures and increases access to local networks.

The information asymmetries between investors with and without country-specific knowledge are made starker by weak institutions (Santangelo and Meyer, 2011). At times of elevated political risk, firms with country-specific knowledge are at an advantage relative to peer firms who lack country-specific knowledge. Country-specific knowledge can enable firms to be the first to receive information about local events that create political risk and about the end of those tensions. Access to this information will allow operators with country-specific knowledge to be one step ahead of their peer firms, both for knowing when the local turmoil will end and investment will be valuable and for knowing how operations can adjust to local conditions. For

example, one operator in Thailand reported that, "during recent protests, mayors would call the wireless operator and report protests or social gatherings". In response, she stated, her operator would shift resources so that it could boost cell capacity in the area experiencing a protest and maintain investment in the network in the area undergoing unrest. A manager in Egypt responsible for investment in new Internet cafés reported that "several wireless services increased in usage during the recent revolution, and as soon as local conflict looked set to subside, investment resumed". A consultant with expertise in the Middle East-North Africa region noted that local firms were the first to invest when conflict subsided in Libya and Egypt, long before conditions on the ground were actually peaceful. Foreign firms were "6 months behind" the regional firms in these cases, he reported.

Hypothesis 1: As political risk rises in a country, firms with access to country-specific knowledge will maintain both investment and operations relative to peer firms who have low levels of country-specific knowledge.

General Knowledge

General knowledge, or the whole sum of knowledge firms accumulate over time, is also a well-documented source of competitive advantage. An extensive literature has examined the information that firms accrue as they gain more operational experience (Perkins, 2014; Henisz and Delios, 2003, 2004; Shaver, Mitchell, and Yeung, 1997). General knowledge should not be confused with accumulated country-specific knowledge, a distinction that Perkins (2014) makes clear. General knowledge arises from experience operating at all, in any market, over time; accumulated country-specific knowledge is amassed by operating at length in a specific market such as Libya, for example (Barkema, Bell, and Pennings, 1996). General knowledge can derive from experience in any market, is transferable across markets, and equips firms with savvy about how to confront institutional dynamics, change, and organizational expansion. Early work on the

stages model of internationalization, which traces the dynamic process whereby firms expand into increasingly distant markets, first explored the benefits of greater operating experience (Johanson and Vahlne, 1977; Davidson, 1980). As the overall diversity of institutional settings faced by a firm expands, investment flows across borders will grow and future ventures will be increasingly likely to succeed (Henisz, 2003; Perkins, 2014). Empirical research, much of it in finance, has confirmed the performance benefits of general knowledge, gained through international experience (Bae, Stulz, and Tan, 2008; Froot and Ramadorai, 2001; Grinblatt and Keloharju, 2000).

General knowledge is available to firms with long histories of operations. General knowledge gives firms what Hmieleski and Carr (2008) call the psychological and social capital that result from coping with stressful situations and change. Facing such stress once will make firms more resilient in the face of stress in the future, because they are both mentally and strategically equipped to confront it. Branzei and Abdelnour (2010) cite such capital to explain why firms that have encountered previous crises will engage quickly when the crisis resolves. Old, experienced firms have a plethora of dynamic capabilities that have allowed them to adapt, succeed, and survive. This knowledge should influence firms' reactions to political risk. As Henisz (2003) shows, firms can accumulate the ability to manage institutional idiosyncrasies.

Hypothesis 2: As political risk rises in a country, firms with access to general knowledge will maintain both investment and operations relative to peer firms who have low levels of general knowledge.

Market Risk Knowledge

Market risk knowledge is the accumulated familiarity with political risk, either in a specific market or in other markets. Experience coping with specific institutional dynamics,

such as regime instability, is associated with superior performance when firms re-encounter the same institutional setting in another market (Henisz and Delios, 2004). Firms may adopt distinct strategies for countries with particular institutional dynamics, such as investors who disclose less information in such countries (Bae, Stulz, and Tan, 2008). Firms may also be more likely to enter markets if they have experience with the particular institutional dynamics that market exhibits, as that experience offers those firms competitive advantage. This is true for markets with weak institutions; firms with experience operating in weak institutional settings are more likely to enter other weak institutional settings (Jimenez, Duran, and de la Fuente, 2011; Holburn and Zelner, 2010). This is also true for particular institutional fluctuations. Del Sol and Kogan (2007) showed how Chilean firms that went through economic liberalization in Chile had competitive advantage over their regional peer firms as other markets' economies liberalized. By gaining experience navigating economic liberalization in one market and developing strategies for success, they were able to succeed more easily than firms that did not have that experience. Market risk knowledge, much like regime instability, weak institutions, and economic liberalization, can be gained through previous experience dealing with political risk.

Caution and prudence are natural reactions to the uncertainty and vulnerability that risk generates (Blandon, 2001). But as well as offering danger, risk also present great opportunity in many industries and many markets. In keeping with this tendency, foreign telecom operators sometimes perceive risky situations as a short-term source of opportunity. Managers and industry experts report a prevailing sense of opportunity, embodied both in the increased traffic that coincides with risk-related events and in the prospect of capturing markets that their competitors may exit. Branzei and Abdelnour (2010) support this interview data by showing that there is indeed opportunity to be had in times of crisis if firms are comfortable with risk. Prior

experience confronting risk should contribute to an operator's comfort dealing with future risk. A manager at a large European multinational with operators throughout the Middle East and Africa indicated that her firm viewed countries' institutional challenges as a source of potential income, in that her firm could use its expertise to handle such institutions better than its competitors. A former FCC official reported that some firms often went to the boundaries of safe markets, pushing to go into markets their competitors viewed as unstable, "because that was how those firms self-identified. They were risk takers." Therefore, firms that have previous experience in politically risky markets are likely to have tested strategies for succeeding in risky settings and even turning those institutional dynamics into an opportunity. These differences distinguish market risk knowledge from the two preceding categories of knowledge. Country-specific and general knowledge give firms the strategies for maintaining previous strategies, market-risk knowledge gives firms the strategies for success and a short-term acceleration of operations, as long as the political risk lasts. Given that political risk is a short-term condition, it should only influence short-term expenditure in the form of operations, rather than long-term expenditure in the form of investment. Firms with market-risk knowledge should be making investment decisions that are in keeping with those made by peer firms who have low levels of market-risk knowledge.

Hypothesis 3: As political risk rises in a country, firms with access to market risk knowledge will decrease investment, similar to peer firms who have relatively low levels of market risk knowledge, and increase operations, in contrast to these peer firms.

DATA, METHODOLOGY, AND RESULTS

Data

An appropriate industry to study hypotheses about firms that stay in markets and are adapting to fluctuations in political risk should be a mature industry, characterized by high

sensitivity to government stability and public activity, high entry barriers (to ensure that firms rarely enter and exit), with a healthy mix of local and multinational players. Telecommunications is one such industry. Operator licenses are awarded through governmental regulatory auctions or purchased through acquisition. The industry is heavily regulated in most markets, and the costs of building a network are substantial. These factors combine to make the mobile telecommunications industry an ideal setting for this study. The 2000–2010 period provides an appropriate time frame in which to explore both long-term investment and operations decisions surrounding political risk. During this period, more countries reached the 75th percentile of political risk than did not (see Table 1).

[insert Table 1 near here]

I use company-level data on the telecommunications industry, a portion of which was used previously by Alcacer and Perkins (2009). Quarterly data for the years 2000–2010 generates 3,835-4,618 observations, across 202-227 operators in 104-106 countries, depending on the dependent variable. These observations produce an unbalanced panel, reflecting changes in ownership over the sample period, the growth of the industry, and reporting shortcomings at the data provider, GSMA Intelligence. On average the panel includes 20 observations per operator over the 42 periods in the sample. Quarterly data is optimal for this study as it captures the rapid response of most operators to political risk. Operators report being able to adjust their investment within weeks as risk conditions change, and thus, annual data would not reveal the relevant fluctuations that quarterly data captures.

Measures

Dependent Variables. I measure the long-term investment of a mobile telecom operator using the natural log of its capital expenditure (capex) in a single country over a 3-month period. Long-term investment projects may span several years; I look at the portion of such investment spent in a given quarter. Capex is defined as capital expenditures on tangible and intangible assets excluding licenses. I measure the operations of a mobile telecom operator using the natural log of its operating expenditure (opex) in a single country over a 3-month period. Operating expenditure captures short-term expenditures to man, power, and run networks day-to-day. Opex is defined as the portion of an operator's spending on normal, ongoing business operations and is calculated by the data provider as (recurring revenue – operating profit (EBITDA)). I use the log form of both capital expenditure and operating expenditure to allow comparison of equal percentage change in capital expenditure where absolute change would exaggerate small increases by firms already investing at high levels. The log form also exhibits less skew.[2]

Data on operators' long-term investment and operations was collected by GSMA Intelligence, a firm operated by GSMA, the trade association of GSM (Global System for Mobile Communications, originally Groupe Special Mobile) mobile phone operators around the world. Long-term investments that contribute to capex are projects like network migration from 2G to 3G technology, construction of new antennas or the dishes that surround them, and the construction of buildings to collect data from the cellular area's (cell's) antennas. Typical specific expenditures for such projects include land acquisition, materials acquisition, and assembly and/or installation. Operations incur expenditures that contribute to opex such as office supplies, the salaries for software engineers to run the computer systems for networks, and

[2] Skew of log(capex)=-0.43; skew of raw capex=6.96.
Skew of log(opex)=-0.09; skew of raw opex=5.56.

energy needed to run networks at varying levels of cell capacity. GSMA Intelligence collects key performance indicators (KPIs) from mobile operators by several means: some of the data are reported by the operator; some are calculated based on the reported data; and some are composed of estimates made by GSMA Intelligence.

Independent Variable. I quantify political risk using risk score data from the PRS Group's International Country Risk Guide (ICRG), which provides monthly risk scores for 140 countries.[3] I aggregate this monthly data into quarterly averages to match the quarterly investment data. ICRG representatives calculate political-risk scores using a documented methodology that combines expert analysis with objective assessment of certain indicators. ICRG measures have been criticized for their subjective content (Henisz, 2000), but their subjective nature makes them particularly useful for this study because they proxy telecommunications managers' impressions of market conditions.

ICRG scores have been used in previous studies of telecommunications investment (Sedik and Seoudy, 2012), and have been shown to match country conditions and other risk scores. Hoti and McAleer (2002) compare risk ratings, risk returns, and their associated volatilities for 12 emerging economies in 6 geographic regions with information on economic and political changes in these countries from the Australian Department of Foreign Affairs and Trade, The Economist, and the CIA's World Factbook to show that the ratings accurately reflect current events. ICRG political-risk scores are a composite of scores in the following categories:

[3] Alternative measures of political risk common in the strategy and international business literature include the POLCON database, Polity IV data, and other measures. POLCON captures the credibility of commitments made by local governments (Henisz, 2000); however, it discounts the social aspects of political risk that the ICRG scores incorporate, such as religious tensions and ethnic fractionalization. Polity IV is popular with political scientists; it measures a country's level of democracy, or the openness of and participation in local elections (Marshall and Jaggers, 2001b). However, Policy IV has been criticized for measuring only one aspect of democracy, and it too fails to capture the social dynamics of political risk (Munk and Verkuilen, 2002). Other studies explore a variety of creative efforts to capture political risk objectively. Jensen (2012), for example, uses price data from insurance agencies that cover political risk.

Government Stability, Government Unity, Legislative Strength, Popular Support for the Government, Socioeconomic Conditions, Unemployment, Consumer Confidence, Poverty, Investment Profile, Contract Viability, Profits Repatriation, Payment Delays, Internal Conflict, Civil War Threat, Terrorism Threat, Civil Disorder Threat, External Conflict, War, Cross-Border Conflict, Foreign Pressures, Corruption, Military in Politics, Religious Tensions, Law and Order, Ethnic Tensions, Democratic Accountability, and Bureaucracy Quality. Each component variable is a continuous measure, with different ranges for different variables. See Appendix 1 for the components of the composite political risk score and their weighting.

Knowledge Moderators. I test the effect of country-specific, general, and market risk knowledge as a moderator of the relationship between both investment and operations, and political risk using a series of proxies for access to this knowledge. I use proxies for access given the myriad challenges with quantifying actual knowledge.

I proxy for access to country-specific knowledge using both the length of time an operator has existed, or operator longevity, and the length of time an owner group has been operating in that market, or owner longevity. An operator here is the local firm operating a wireless system, such as AT&T's "Idea Cellular", which operates in India. The owner group is the controlling company, or in this case, AT&T. Operator longevity is the accumulated sum of periods an operator has existed in a given market. 2000-2010 witnessed significant expansion of access to wireless service around the world, and as such, the average age of an operator in my sample is around 8 years (31.9 quarters). However, one operator does accumulate over 22 years of experience (201 quarters) by the end of the 2000-2010 period, as I extended operator longevity back before 2000 to the original starting date for all operators in my sample. Owner longevity is the accumulated sum of periods an owner group, such as AT&T, has been operating

as a majority owner in the local market. On average, owner groups were in markets for just over 5 years (22.3 quarters). This data came from both the Alcacer-Perkins (2009) database and was supplemented with hand collected data.

I proxy for access to general knowledge using the age of an owner group, or owner age. This variable is the accumulated number of periods an owner group has existed[4]. Some owner groups began as state-run organizations that privatized in the late 20th century; I consider the state-owned predecessor entity as the same firm, and count the origin date for such companies as the year the state-owned entity was formed. To account for the substantial changes an organization faced more than 50 years ago, I winsorize the variable to the 99.9th percentile, 202 quarters, and replace all values above 202 with that value. While the average age of owner groups in my sample is just over 9 years (56 quarters), six large owner groups have existed for more than 50 years. This data was hand collected using a variety of online sources including company websites, industry sources, and well as business information sites.

I proxy for access to market risk knowledge using the accumulated time a market has been risky, market risk length, as well as the accumulated experience an owner group has with elevated political risk, owner risk experience. The former, market risk length, is the length of time a market's political risk score has been continuously above the 75th percentile (54.83), starting from 2000. The latter, owner risk experience, is calculated as the number of operators an owner group controls each period that are "high risk" (above the 75th percentile, 54.83), accumulated over periods. Therefore, if an owner has 3 operators, 2 of which are "high risk" for

[4] Robustness checks were done with an alternative proxy for general knowledge, the owner group's experience with wireless services, or *owner wireless age*. This variable was the accumulated number of periods an owner group has offered wireless services. Results from this robustness test cohere with the main results listed in this study.

all of 2000, the owner group has accumulated 8 periods of high risk experience (2 operators x 4 periods) by 2001.

Model

I test my hypotheses by estimating the model:

$$Y_{j,i,t} = \beta_0 + \beta_1(political\ risk_{j,t}) + \beta_2(political\ risk_{j,t}\ \#\ knowledge\ moderator_{(j,i,t)/(j,t)}) + \gamma_{j,t} + \rho_{j,i,t} + \alpha_t + u_j + u_{j,i} + \varepsilon_{j,i,t}$$

where $Y_{j,i,t}$ is the capital expenditure, logged, of operator i in country j at quarter t.

$Political\ risk$ is the political-risk score for each country, j , at each quarter, t. Country-specific, general, and market risk knowledge moderators, which apply to the operator or operator's owner (operator i in country j at quarter t), or to the operator's market (each country, j , at each quarter, t), are interacted with the $political\ risk$ of the operator's country in that quarter.

The term $\gamma_{j,t}$ includes control variables coded at the country-quarter or country-year level. I first control for financial risk, or the portion of the risk the country faces that is entirely financial. Controlling for financial risk allows me to pinpoint the unique effects of political risk and to ensure that the investment decisions I investigate are not being driven by financing constraints (Tong and Wei, 2009). Financial risk is computed by the PRS Group's International Country Risk Guide as another component measure of "composite risk"; it has 5 components: foreign debt as a percentage of GDP, foreign debt service as a percentage of exports of goods and services, current account as a percentage of exports of goods and service, net liquidity as months of import cover, and exchange-rate stability.[5] Financial risk is entirely computed using country financial data. Different countries were penetrated differently during the 2000–2010 period, offering operators different potentials for growth. To ensure that my results are not

[5] The correlation between *financial risk* and *political risk* is low (correlation = 0.10). See Table 3.

driven by these growth opportunities, I control for market penetration in each country, measured as the total number of mobile telephone connections per capita in that country in a given quarter. This data was collected by GSM Intelligence at the operator level; I then aggregated it to the country level. To control for differences in the consumption of telecommunications services by countries of differing wealth, I include a measure of individual wealth, GDP per capita, in all models. GDP-per-capita data was collected by the World Bank annually and shared on its public data site. Given the high correlation between GDP per capita and political risk, I also run two separate robustness tests where I first exclude GDP per capita from all models and then orthogonalize political risk and GDP per capita using a modified version of the Gram-Schmidt orthogonalization method.

$\rho_{j,i,t}$ represents all control variables coded at the operator-country-quarter level. I control for the number of customers and the prominence of an operator in a given market with market share. Monopolistic operators will likely invest differently in a market than will a competitive firm. Market-share data was collected by GSMA Intelligence for mobile operators in its sample; it is calculated as the percentage of connections in a given country served by a given operator. I also control for the state-ownership of an operator. In markets where political processes adhere less to established structures, government connections can offer a large set of complications, which can alter how an operator may behave as risk rises. To denote operators owned by the local government, I construct a continuous measure of government (domestic) ownership as the percentage of ownership held by the local government in that quarter. All operators owned by foreign governments were assigned a value of 0. Data on government ownership was collected by hand using a variety of sources, such as industry press releases. Majority owners with less than full ownership may have less leeway to determine the operator's strategy than an owner

with 100% control. Thus to control for owner groups who do not maintain full control of an operator, I include a control for the majority group ownership. Lastly, larger owner groups may have internal resources that enable distinct strategies for confronting political risk. I control for the size of the owner group, using the number of operators an owner group control each period, or owner size.

Year fixed effects (α_t) are included to control for time-varying effects. Country random effects (u_j) measure the difference between each country average for the outcome variable and the overall average for that variable; operator random effects ($u_{j,i}$) measure the difference between each operator average and the country average for a given outcome variable. The error term $\varepsilon_{j,i,t}$ measures the error of each observation, or its deviation from the operator average.

Summary statistics and correlations of all variables appear in Tables 2 and 3, respectively.

[insert Tables 2 and 3 near here]

Analysis and Results

This paper employ random-effects to model the structure of the data in a combined mixed model. There are two reasons to employ random-effects models for this analysis. First, the data is hierarchical; it describes operators inside countries. Random effects can take the hierarchical nature of this data into account in a single model. The random effects are the deviations of the country mean from the overall mean, and then of the operator mean from the country mean. By breaking up the residual into group components, random effects identify the variance of groups from the population average and produce group-level coefficients that vary across both groups

and levels. Random effects thus capture country-level as well as operator-level variation. Second, operators exhibit unique appetites for risk, changing their capital-expenditure decisions depending on the risk prevailing in the country. Random-effects models allow different operators, and the countries in which they operate, to have unique intercepts. The results found in these models allow me to assert that, for any given operator, in any given country, a change in the political climate will affect the outcome in a particular way. Robustness tests of data were conducted using OLS and fixed effects at the operator level and the results are highly consistent (see Appendix 2). Both my independent variable, political risk, and my knowledge moderators are time varying, so I can still explore my main effects when using fixed effects.

My final model specifications yielded a sample of 202 operators across 106 countries for all models that explore the knowledge moderating effects of political risk on long-term investment, and a sample of 227 operators across 104 countries for all models that explore the knowledge moderating effects of political risk on operations. The 2000–2010 data analyzed at the quarter level produced a sample of 3,835 observations for all long-term investment models and 4,618 observations for operations models. On average, the sample includes 20 observations for each operator. Long-term investment results appear in Table 4 and operations results appear in Table 5.

[insert Table 4 and Table 5 near here]

Results

One shortcoming of an interaction effect is the difficulty of interpreting coefficients independently. The simplest way to present these coefficients is through their varying marginal effects, which are plotted for each moderator-dependent variable pair in Figures 1–12. Some

understanding about the direction and significance of the interaction terms, however, can also be gathered from the coefficients themselves. I discuss the results and their interpretation below.

Model 1 of Table 4 reports the general trends for long-term investment as political risk changes. The negative term on $political\ risk$, ($\beta = -0.003, p = 0.462$) suggests that there is no clear statistical correlation between political risk and long-term investment in the absence of any moderators. The marginal effects of political risk on long-term investment in Figure 1 show that a gently downward sloping trend is bounded by large confidence intervals. Model 1 of Table 5, however, reports a statistically significant decrease in operations as political risk rises. The coefficient on $political\ risk$, ($\beta = -0.031, p = 0.000$) suggests that, as the political risk an operator faces increases, they will decrease their operations. This result is visually captured in Figure 2.

[insert Figure 1 and Figure 2 near here]

Models 2 and 3 look at how long-term investment and operations vary as operators with country-specific knowledge react to political risk. In Table 4 the significant coefficient on $operator\ longevity$ ($\beta = -0.014,\ p = 0.017$) in Model 2 and the highly significant coefficient on $owner\ longevity$ ($\beta = -0.011,\ p < 0.000$) in Model 3 suggest that country-specific knowledge is associated with lower long-term investment. However, the interaction terms, $operator\ longevity * political\ risk$ ($\beta = 0.0004, p = 0.000$)and $owner\ longevity * political\ risk$ ($\beta = 0.0004, p = 0.001$) suggest that while country-specific knowledge, as measured by operator longevity is not associated with significantly different investment as political risk rises, country-specific knowledge, as measured by owner longevity is. For owner longevity the interaction term indicates that country-specific knowledge is associated with higher

levels of investment as political risk rises. While these numbers are quite small, the interaction term can mean dramatic changes in the effect of political risk for firms with high levels of country-specific knowledge. The coefficients on $political\ risk$, ($\beta = -0.012, p = 0.008$) and ($\beta = -0.008, p = 0.043$) suggest that operators without country-specific knowledge exhibit lower long-term investment at higher levels of political risk. The clearest way to visualize the differences the interaction terms suggest is through marginal effects plots, which can be found in Figures 3 and 5. Here, it is clear that for political risk above 70, operators with high levels of owner longevity have significantly higher investment than operators with low levels of this knowledge.

[insert Figure 3 and Figure 5 near here]

In Models 2 and 3 of Table 5 the effects of country-specific knowledge again distinguish firm strategy, but this time for operations. The significant coefficients on $operator\ longevity$ ($\beta = -0.024, p < 0.000$) and $owner\ longevity$ ($\beta = -0.043, p < 0.000$) suggest that country-specific knowledge is associated with lower operations. However, the interaction terms, $operator\ longevity * political\ risk$ ($\beta = 0.001, p < 0.000$) and $owner\ longevity * political\ risk$ ($\beta = 0.0011, p < 0.000$) both indicate that country-specific knowledge is associated with relatively higher levels of operations at the higher levels of political risk. Again, these interaction terms are quite small, but they can multiply into dramatic effects on operations, as can be seen in the marginal effects plots in Figures 4 and 6. In these marginal effect figures, the slope for operators with greater longevity, or country-specific knowledge, stays relatively flat compared to the significant downward slope for firms with less country-specific knowledge. The coefficients on $political\ risk$, ($\beta = -0.057, p < 0.000$) and ($\beta = -0.044, p < 0.000$) suggest

that operators without country-specific knowledge exhibit lower levels of operations at the higher levels of political risk.

Therefore, the results suggest that Hypothesis 1 is strongly supported for owner longevity, but not as clearly supported for operator longevity, which is not associated with significantly different investment while it is associated with significantly different operations.

[insert Figure 4 and Figure 6 near here]

Model 4 of Table 4 looks at how general knowledge mediates the relationship between political risk and long-term investment. The significant coefficient on $owner\ age$ ($\beta = -0.010, p < 0.000$) suggests that general knowledge is associated with lower long-term investment at lower levels of political risk. As risk rises, however, long-term investment for firms with general knowledge increases. The interaction term $owner\ age * political\ risk$ ($\beta = 0.0002, p < 0.000$) indicates that general knowledge is associated with an increase in long-term investment at the higher levels of political risk, while the coefficient on $political\ risk$, ($\beta = -0.017, p < 0.000$) alone suggests that operators without general knowledge exhibit lower long-term investment at the higher levels of political risk. Figure 7 displays the marginal effects for groups at the 10th and 90th percentiles of owner age. The slope representing long-term investment for operators whose owners are 3 months old decreases, following a significantly different path than increasing investment by operators who owners are 46 years old.

[insert Figure 7 near here]

In Model 4 of Table 5 I explore the importance of general knowledge for operations as political risk rises. The significant coefficient on $owner\ age$ ($\beta = -0.004, p = 0.002$)

suggests that general knowledge is associated with lower operations at low levels of political risk. The interaction term $owner\ age * political\ risk$ ($\beta = 0.0001, p < 0.000$) indicates that general knowledge is associated with relatively higher levels of operations at the higher levels of political risk while the coefficients on $political\ risk$ ($\beta = -0.036, p < 0.000$) show that at high levels of political risk, young operators without general knowledge exhibit lower levels of operations. Figure 8 captures the marginal effects for firms with distinct levels of access to general knowledge. While operations drop or remain constant for operators with young and old owners, the drop in operations is significantly steeper for those whose owner groups are younger or have less access to general knowledge.

Overall, the effect of general knowledge on strategy is similar to that of country-specific knowledge: as political risk rises, firms with general knowledge increase or maintain investment at levels comparable to those at low political risk, and maintain operations while peer firms drop both investment and operations. These results support Hypothesis 2.

[insert Figure 8 near here]

Models 5 and 6 look at how long-term investment and operations vary as operators with market risk knowledge react to political risk. In Table 4 the coefficients on $market\ risk\ length$, $owner\ risk\ experience$, the interactions terms, as well as $political\ risk$ are all insignificant. This suggests that the long-term investment strategy of operators is not affected by how long a market has been risky or how much experience an owner groups has confronting high risk markets.

In contrast, Models 5 and 6 of Table 5, looking at the operational activity of firms as political risk rises, show distinct strategies for firms with differing access to market risk

knowledge. Firms with access to greater market risk knowledge increase operations while those without market risk knowledge decrease operations. The significant coefficients on $market\ risk\ length$ $(\beta = -0.090, p < 0.000)$ and $owner\ risk\ experience$ $(\beta = -0.011, p < 0.000)$ suggest that market risk knowledge is associated with lower operations at low levels of political risk. The interaction terms, $market\ risk\ length * political\ risk$ $(\beta = 0.0019, p < 0.000)$and $owner\ risk\ experience * political\ risk$ $(\beta = 0.0003, p < 0.000)$ both indicate that market risk knowledge is associated with relatively higher, or increasing, levels of operations at the higher levels of political risk. In contrast, the coefficients on $political\ risk$, $(\beta = -0.041, p < 0.000)$ and $(\beta = -0.037, p < 0.000)$, suggest that operators without market risk knowledge exhibit lower, or decreasing, levels of operations at the higher levels of political risk. The visual representation of the effects of political risk on operations for firms with and without market risk knowledge is captured in Figures 10 and 12. In these marginal effect figures, the slope for operators with greater market risk knowledge increases as political risk rises while the slope for firms with little risk experience, or market risk knowledge, decreases.

Therefore, the effect of market risk knowledge on firm strategy is a decrease in investment, similar to peer firms, but an increase in operations. These results support Hypothesis 3.

[insert Figure 10 and Figure 12 near here]

Qualitative Data

Quantitative analysis was supplemented by a series of interviews with industry experts and managers at mobile telecom operators around the world about how firms deal with political

risk. The individuals interviewed were based in France, Egypt, Argentina, the United States, Thailand, and the United Arab Emirates; jointly, they had direct experience working in Europe, North Africa, Sub-Saharan Africa, the Gulf countries, the Levant, the Middle East, Southeast Asia, the United States, Central America, and South America. These interviews provide confirmatory evidence in support of the quantitative analysis.

The interviews covered a range of relevant topics, but several points were particularly salient. First, the interviewees confirmed that their firms closely monitor political risk and that the main drivers of their attentiveness are human-resource concerns. As political conditions deteriorate in particular regions of dangerous countries, mobile telecommunications operators are prepared to remove their personnel within hours. Human-resource considerations, however, are not their sole preoccupation; operators are prepared to adjust business plans within days or weeks. Second, interviews with local operators and their multinational parent companies confirmed that parent-company involvement is substantial and pertinent to the measures used in this study. Long-term investments, or capital expenditures (capex), are mostly determined by corporate leadership in multinationals' home countries; short-term expenditures, captured in operating expenditures (opex), are mostly determined by the local operator's staff. As one individual reported, "corporate" sets the capex budget and would want extensive justification from the team on the ground to change it; by contrast, pushback from headquarters is typically minimal on the opex budget. These two takeaways substantiate two basic premises of this work: that political risk is an important influencer of strategy and that long-term investment and operations are appropriate measures with which to explore the varieties of strategies determined by operators and their owner groups.

Robustness Tests

In addition to the models discussed above, I ran a series of robustness tests to investigate the strength of my results. First, to explore the possibility that the importance of general knowledge was driven by the operationalization of the concept, I used the length of time the owner group had been offering wireless services as an alternative measure of general knowledge. Many current wireless operator owner groups started as fixed line telecommunications companies decades prior to the spread of wireless services. Wireless services did not grow substantially until the 1990's and the early part of the 2000's for most of the world. To capture experience offering this product in particular, I re-ran my models using this alternative version of general knowledge. The results from these models were identical those from the owner group's age in direction and significance. Either operationalization produced the same understanding.

I next ran a test of my mixed model selection to investigate how important regression design and use of maximum likelihood estimation were for my results. Instead of the mixed model that included a random effect for both operator and country, I ran an OLS model with operator fixed effects. These models include the same controls as the mixed models, as all control variables were time varying. Results from these fixed-effects models are highly similar to those in the mixed models in both significance and direction. The major difference of note is that the importance of country-specific knowledge is not as significant for investment models. Otherwise, in magnitude and significance, the results are identical. The results from the fixed effects models can be found in Appendix 2.

Given the nature of long-term investment—with its extended timelines and organizational structures built around projects— I considered whether investment would be adjustable in response to risk changes within a given period. Interview data provides some assurance. Multiple firms reported that a response to risk could happen within a very short time span. One

manager at a large multinational reported that projects were put on hold very quickly in response to violence accompanying the Arab Spring: "large corporate projects of the kind that would be captured by capital expenditures took only days to suspend, or weeks at most". To confirm these remarks, I ran a robustness test that included a lagged measure of political risk, measured at three months prior. The results from these models are highly similar to the results from the main-model results.

The correlation matrix in Table 3 reports that the variables included in my analysis are not overly correlated. A VIF test added further confidence to the inclusion of the independent and control variables. One variable stands out in Table 3, however: GDP per capita, which is highly correlated with political risk (corr=-0.74). The high correlation of GDP per capita and political risk is unsurprising, given that political instability is most common in the world's poorest countries. To explore the possibility that my results are driven by development, and are not indeed attributable to political risk, I ran a series of models that excluded GDP per capita from the set of control variables. The results from these models provided larger and more significant coefficients, as other variables picked up some of the effect of wealth and development in countries. While greater in magnitude, these coefficients were identical to the main results in direction, suggesting that excluding GDPpc does not change the overall direction of my results.

I conducted a second test to ensure that correlation of GDP per capita with political risk was not driving my results by orthogonalizing political risk and GDP per capita. Using the Gram-Schmidt orthogonalization method (Golub and Van Loan, 1996) I created orthogonalized versions of both political risk and GDP per capita. I used political risk as the anchor variable and generated an orthogonal version of GDP per capita by subtracting the projection of GDP per

capita onto the line spanned by the vector of political risk. Tests confirmed that the resulting vectors for orthogonalized political risk and GDP per capita indeed had a correlation of zero. Using these two modified versions of the variables, I re-ran all models. The results from these models differed in that the general trend for political risk and investment is positive, the coefficient on political risk was no longer significant for Models 2-4 of the investment results, and knowledge moderator variables all now had positive coefficients, suggesting that generally higher levels of these knowledge categories are associated with greater investment and operations. The interaction terms, however, are all consistent with those in the main models in both significance and direction. The sole marginal effects plot difference was that now country-specific knowledge no longer had a significant effect on investment.

This study risks being influenced by the opportunities that owner groups perceive in other markets as political risk rises. If an owner has growth potential elsewhere, it may be less willing to make large long-term investments and operate at a high level in a risky market. To test this possibility, I re-ran my main models conditional on operators having an average penetration above the 25th percentile (38%), and then conditional on operators having a minimum penetration above the 25th percentile (3%). Penetration is an appropriate measure of opportunity, given that low-penetration markets often experience rapid growth. Restricting my sample as such dropped my sample size down to 2,972 and 3,252 respectively for long-term investment models and down to 4,014 for operations models. These models are nearly identical to the main results, with notable shifts again in the general trend of political risk and investment, which is now positive. This fits with the intuition that firms that lack investment opportunities elsewhere will invest at higher levels even as political risk rises. As well, the significance of political risk in the investment models drops out. Otherwise all results are highly similar to those in the main

models. Moreover, the interaction terms and the coefficients on the knowledge moderators retain significance and direction, and the marginal effects plots suggest similar trends for this subsample as compared with the main sample.

I next investigated the possibility that some firms are risk seeking and may be entering markets as the political risk rises. If this were the case, the results I find in my main models may be capturing risk seeking behavior instead of the strategies firms select when political risk rises in markets in which they're already located. To explore the possibility I limited my sample to just those firms that have been in a market for over a year, dropping my sample size down to 3,620 and 4,377 for my investment and operations models, respectively. This is a small decrease in sample size, given that owners and operators rarely enter and exit markets. The results using this subsample are highly similar to those from my main models, with no substantive changes in significance or magnitude.

I also explored the possibility that owner groups may have local-like benefits if they come from institutionally similar countries. The importance of regulatory similarity in particular has been found to be important for a firm's success in foreign market (Perkins, 2014). This same finding may extend to the activities of firms in foreign markets. A foreign firm from a similar regulatory environment may anticipate success, be more confident, and increase both investment and operations in spite of rising or elevated political risk. To assess the importance of regulatory similarity I employed Perkins (2014)'s Euclidean regulatory distance measure for the operator and owner group countries. When I included this additional control variable in all of main models I found that it was not significant in any models. Its inclusion did not change the interaction effects of the significance of any of the knowledge moderators. This suggests that, by

removing the effect of regulatory similarity, no substantive changes occur to the moderating effect of knowledge on the relationship between political risk and investment or operations.

Lastly, I considered the importance of cash flow for the investment and operations activities of operators. To look at cash flow I re-ran my main models using a logged measure of ebitda provided by GSM Intelligence as a control variable. The use of ebitda in my main models is problematic, given the high correlation of the variable with investment (corr=0.789) and with operations (corr=0.886). However, including this variable can at least provide suggestive evidence about the importance of cash flow to the investment and operations decisions firms are making as political risk rises. In all models ebitda is a significant control variable, suggesting that cash flow does indeed influence the investment and operations decisions of firms. The inclusion of this variable also increases both the significance and magnitude of all coefficients in my models. In other words, once cash flow is controlled for knowledge is even more influential on the relationship between political risk and both investment and operations.

DISCUSSION

This study identifies distinct investment and operations strategies on the part of mobile telecom operators confronting elevated political risk. In this section I consider an alternative explanation for why some firms may increase investment and/or operations and explore the importance of government ownership.

Alternative Explanation: Capital Constraints

The results of my analysis of country-specific, general, and market risk knowledge has an potential alternative explanation. It could be that my knowledge proxies capture differing capital constraints imposed on small, local firms and large, foreign, multinational firms. Local

restrictions on capital are an important determinant of firm behavior during currency crises (Desai, Foley, and Forbes, 2004). Capital restrictions may shrink growth opportunities, or limit a firm's capacity to operate during political risk crises if the precipitating events cause fearful banks and other sources of financing to offer capital at higher rates or not at all. Large firms have internal resources they can turn to at such times. While I control for firm size using the number of operators an owner group controls in any given period, this alternative explanation deserved more exploration.

To explore the possibility that the finding of lower investment levels on the part of local firms was not capturing capital constraints on such firms, I re-ran all of my models and included a control measure for dependence on external finance. Using an approach pioneered by Rajan and Zingales (1998a), I constructed a measure of dependence on external finance using capital expenditure and operating profit, which together capture the amount of a firm's available cash in a given period. Rajan and Zingales were forced to rely on U.S. sector-level measurements and to extend them to firms abroad; I was able to construct this measure at the operator level using financial data provided by GSM Intelligence:

$$Dependence\ on\ External\ Finance = \frac{capex - ebitda}{capex}$$

As constructed, however, dependence on external finance presents an endogeneity problem: for the long-term investment models raw capex is a component of both an explanatory variable and the dependent variable. And for the operations models, operating profit, ebitda, is a component again of both an explanatory variable and the dependent variable. Thus the dependence on external finance variable is included only in the robustness tests as suggestive evidence. To make some effort to overcome these endogeneity issues, I use a lagged version of

the variable, which allows the explanatory variable to rely on previous capex and ebitda, while the dependent variable relies on current capex. In all models that include the previous dependence on external finance, the results hold in direction and maintain significance.

I also explored the importance of credit constraints coming from the mobile telecommunication operator's home country. While the constraints individual firms feel may influence their ability to weather political risk, I considered whether country-level credit constraints can influence all firms and impact the general reactions of firms to that risk. To test this importance I ran an additional robustness test where I included the interest rate of the operator's country. This variable is calculated as the real interest rate of the operator's country, reported on an annual basis by the World Bank. The results from these tests suggest that interest rates do not explain the importance of knowledge that I find in my main models. Most coefficients maintain their significance and direction and many models yield results that give even greater importance to the knowledge categories in settings of political risk. Specifically, the importance of country-specific knowledge increases when controlling for the country's interest rate. The only exception is market risk knowledge, which, at high levels, is no longer associated with increasing investment as political risk rises. While the slope is positive the confidence intervals suggest that the effect is constant, or that firms with market risk knowledge simply maintain investment.

State-Owned Firms

The strategic considerations of state-owned business enterprises have elicited increasing interest in recent years. The questions at issue typically center on how government influence and connections affect strategy and what the associated performance implications are (Ma and Khanna, 2013; Kimmitt, 2008). In interviews, managers at mobile telecom operators invariably

reported an expectation for state-owned and private firms to behave similarly. One former regulator at the FCC, tasked with monitoring foreign regulators, reported that he had not witnessed them interfering with or controlling the business decisions of local operators. He did speculate, however, that government-owned enterprises operating abroad would "develop a different culture, a different set of responses." A consultant working in the Gulf region suggested that state-owned enterprises' relationships were "transitioning from cooperative to retaliatory", especially in African markets. Previous silent agreements to limit competition were being abandoned, and state-owned enterprises were targeting competitors that had entered their markets. Using the portion of the operator that is owned by the local government as a control variable, I find that government ownership is a significant predictor of an operator's strategy. Specifically, I show that government ownership is associated with a decrease in both investment and operations in all models, suggesting a more risk-averse strategy for government entities. Interviews, recent developments, and findings in my data suggest that there is misunderstanding over the trends of telecom operators who are owned by governments. Future work could explore the behavior of state-owned enterprises when they operate abroad, and the business and political agendas of the retaliatory strategies of state-owned firms.

Alternative Strategies

While this study focuses on the use of two specific activities firms select, long-term investment and short-term operations, wireless telecommunications operators rely on a variety of tools when selecting the right strategy for politically risky settings. I explore specifically the possibility that operators in this industry may be turning to other strategies as political risk rises rather than investment or operations. First I explored the possibility that operators have acquisition-based strategies. To explore this possibility I ran my models on several different

dependent variables: total number of connections and total number of network additions. I find that operators with country-specific knowledge have more connections generally, and those connections are dropping at a slower rate than for peer firms. Also, operators with country-specific knowledge have similar network additions, but these drop less than for peer firms as political risk rises. Operators with general knowledge have similar number of connections and network addition rates as those without general knowledge, and this remains constant even as political risk rises. And operators with market risk knowledge also have similar number of connections and network additions, and these drop along with peer firms as political risk rises. Overall, the results suggest that firms are not increasing acquisitions, regardless of their knowledge resources.

Second, I considered the possibility that operators are dropping down the cost of joining their network as political risk rises, perhaps hoping to compete on price. To assess this possibility I re-ran my main models but on the dependent variable, acquisition costs/user, which measures how much an operator pays to acquire a new customer, reflecting both infrastructure and the fees charged to new customers. I find that operators with country–specific knowledge have lower acquisition costs, likely reflecting superior infrastructure and lower entrance fees. For operators with greater operator longevity this difference does not change as political risk rises, but for operators owned by firms with higher owner longevity the acquisition costs converge as political risk reaches the highest levels. Operators with greater general knowledge have lower acquisition costs as low levels of political risk, but higher costs above the median levels of political risk. This suggests that these select operators firms are indeed charging higher fees to new customers when political risk is higher. Operators with high levels of market risk knowledge do not have significantly different acquisition costs than operators with low levels of

this knowledge. Overall, results from these additional models suggest that firms with varying knowledge resources are not consistently turning to other strategies as political risk rises and that investment and operations are independent of acquisitions or price-based strategy decisions.

I also test the importance of cost differentiation generally, in all settings of political risk. To do so I run an additional robustness test where I include the operator's cost differentiation relative to its competitors. This variable, cost differentiation, is measured as the operator's [log(arpu)/country average log(arpu)]. For the robustness test I include this additional control in all of my main models that look at capex and opex. In each of these models cost differentiation yields a significant and positive coefficient, suggesting that firms that charge more per customer are also those firms spending more on long-term investment and short-term operations. Operators could, thus, be using cost differentiation as one of their general strategies that is not contingent on political risk. Including the cost differentiation control, however, did not change the results from the main models regarding the knowledge moderators and political risk. The importance of these knowledge resources remained important even when controlling for this alternative strategy of low-cost or cost differentiation.

CONCLUSION

By showing that knowledge is an important determinant of firms' investment strategy in politically risky locations, this paper contributes to several streams of literature. Previous literature has shown that entry, exit, and entry-mode decisions are affected by a host of political factors; I highlight a variety of choices firms make when they remain in politically risky markets. Specifically, I show that, as political risk rises, firms with country-specific and general knowledge increase or maintain investment, while their peer firms decrease investment. Firms with these knowledge resources thus maintain strategies and are less affected by political risk.

Firms with market risk knowledge cut back on investment but significantly increase operations, while peer firms decrease both investment and operation. Market risk knowledge is thus uniquely associated with a short-term strategy that may be trying to capitalize on the opportunities risk presents. With these findings, I add market-based strategies to existing knowledge about how firms deal with risk. I also contribute new understanding of the importance of knowledge in politically risky settings. Prior work has documented that local information confers a competitive advantage, and that experience operating in heterogeneous markets gives multinationals competitive advantages when later confronting similar institutional conditions. I compare these knowledge types, and show that the different knowledge is associated with varying strategies. Managers operating during periods of elevated political risk can take away the lesson to consider an ex-ante strategic plan for confronting political risk. As a telecommunications consultant operating in the Gulf countries observed, "Everyone in this industry is ad hoc about political risk." Businesses track political-risk-related events for their human-resource implications, but rarely apply this knowledge to business decisions until the effects of such events are unavoidable.

A central challenge of this work is self-selection on the part of multinational firms that enter foreign markets. Firms that choose risky markets necessarily have a different risk appetite than domestic firms or firms that confine themselves to stable markets. As one interviewee observed, the companies that go to the risk frontier identify themselves as such; other firms don't want to take those risks. Thus the sample of firms operating in markets with elevated political risk has potential for bias. Future work can make efforts beyond the random effects used in my models to confront these issues of bias. This study takes advantage of institutional differences between countries; future work also may be able to capture more nuances by exploring regional

differences within a single country. Managers who had encountered political risk noted that risk is not uniform throughout a country, and telecom operators' presence in a country is often regionally variable. Regional analysis could pinpoint such differences while sidestepping the objection that omitted variables bias cross-country studies. Explorations of regional differences could be built on the work of Samford and Gomez (2014) in Mexico and that of Ma, Tong, and Fitza (2013) in China. Finally, telecommunications is a unique industry, with high entry barriers, large fixed costs, and substantial involvement on the part of government regulators. These features serve this study, but future work should explore the generalizability of these results to other industries. Ksoll, Macchiavello, and Morjaria (2010), for example, studied export-oriented industries in Kenya following a disputed election. Extending the research reported here into export-oriented industries and beyond should generate further insight for international business.

REFERENCES

Alcacer, J., and S.E. Perkins, 2009, Corporate Governance, Ownership Structure, and Sustaining Competitive Advantage: A Duration Based Approach.

Alesina, A., S. Ozler, N. Roubini, and P. Swagel, 1996, Political Instability and Economic Growth, Journal of Economic Growth, 1(2): 189-211.

Alfaro, L. and M. Chen, 2011, Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance, NBER Working Papers 17141, National Bureau of Economic Research.

Antras, P., M.A. Desai, and F.C. Foley, 2009, Multinational Firms, FDI Flows, and Imperfect Capital Markets, Quarterly Journal of Economics, 124(3): 1171-1219.

Bae, K., R.M. Stulz, and H. Tan, 2008, Do Local Analysts Know More? A Cross-Country Study of the Performance of Local Analysts and Foreign Analysts, Journal of Financial Economics, 88: 581-606.

Baik, B., J-K Kang, J-M Kim, and J. Lee, 2013, The Liability of Foreignness in International Equity Investments: Evidence from the US Stock Market, Journal of International Business Studies, 44: 391-411.

Barkema, H.G., J.H.J. Bell, and J.M. Pennings, 1996, Foreign Entry, Cultural Barriers, and Learning, Strategic management Journal, 17: 151-166.

Bergara, M.E., W.J. Henisz, and P.T. Spiller, 1998, Political Institutions and Electric Utility Investment: A Cross-Nation Analysis, California Management Review, 40(2): 18-35.

Blandon, J.G., 2001, The Timing of Foreign Direct Investment Under Uncertainty: Evidence from the Spanish Banking Sector, Journal of Economic Behavior and Organization, 45: 213-224.

Bonardi, J-P, A.J. Hillman, and G.D. Keim, 2005, The Attractiveness of Political Markets: Implications for Firm Strategy, Academy of Management Review, 30(2): 397-413.

Bonardi, J-P, G.L. Holburn, and Vanden Bergh, 2006, Nonmarket Strategy Performance - Evidence from U.S. Electric Utilities, Academy of Management Journal, 49(6):1209-1228.

Branzei, O., and S. Abdelnour, 2010, Another Day, Another Dollar: Enterprise Resilience Under Terrorism in Developing Countries, Journal of International Business Studies, 41: 804-825.

Brink, C., 2004, Measuring Political Risk: Risks to Foreign Investment, Ashgate Publishing, England, United States.

Brouthers, K.D., 1995, The Influence of International Risk on Entry Mode Strategy in the Computer Software Industry, Management International Review, 35: 7-28.

Butler, K., and D. Joaquin, 1998, A Note on Political Risk and the Required Return on Foreign Direct Investment, Journal of International Business Studies, 29: 599-608.

Choe, H., B. Kho, and R. Stulz, 2001, The Trading Experience of Foreign Investors in Korea, Review of Financial Studies, 18(3): 795-830.

Click, R.W., and R.J. Weiner, 2010, Resource Nationalism Meets the Market: Political Risk and the Value of Petroleum Reserves, Journal of International Business Studies, 41: 783-803.

Davidson, W., 1980, The Location of Foreign Direct Investment Activity: Country Characteristics and Experience Effects, Journal of International Business Studies, 11(1): 9-22.

Del Sol, P., and J. Kogan, 2007, Regional Competitive Advantage Based on Pioneering Economic Reforms: The Case of Chilean FDI, Journal of International Business Studies, 38(6): 901-927.

Demirguc-Kunt, A., L.F. Klapper, and G.A. Panos, 2011, Entrepreneurship in Post-Conflict Transition, Economics of Transition, 19(1): 27-78.

Desai, M.A., C. F. Foley, and K. J. Forbes, 2004, Financial Constraints and Growth: Multinational and Local Firm Responses to Currency Crises, NBER Working Paper 10545.

Dvorak, T., 2005, Do Domestic Investors Have an Information Advantage? Evidence from Indonesia, Journal of Finance, 60(2): 817-839.

Fitzpatrick, M., 1983, The Definition and Assessment of Political Risk in International Business: A Review of the Literature, Academy of Management Review, 8(2): 249-254.

Froot, K.A., and T. Ramadorai, 2008, Institutional Portfolio Flows and International Investments, Review of Financial Studies, 21(2): 937-971.

Golub, G. H., and C.F. Van Loan, 1996, Matrix Computations, 3rd edition, Johns Hopkins Studies in Mathematical Sciences.

Grinblatt, M. and M. Keloharju, 2001, How Distance, Language, and Culture Influence Stockholdings and Trades, Journal of Finance, 61(3): 1053-1071.

Guidolin, M., and E. La Ferrara, 2007, Diamond are Forever, Wars Are Not: Is Conflict Bad for Private Firms?, American Economic Review, 97(5): 1978-1993.

Henisz, W.J., 2000, The Institutional Environment for Multinational Investment, Journal of Law, Economics, and Organizations, 16(2): 334-364.

Henisz, W.J., 2003, The Power of the Buckley and Casson Thesis: The Ability to Manage Institutional Idiosyncrasies, Journal of International Business Studies, 34(2): 173-184.

Henisz, W.J., and A. Delios, 2003, Political Hazards, Experience, and Sequential Entry Strategies: The International Expansion of Japanese Firms, 1980-1998, Strategic Management Journal, 24: 1153-1164.

Henisz, W.J., and A. Delios, 2004, Information or Influence? The Benefits of Experience for Managing Political Uncertainty, Strategic Organization, 2(4): 389-421.

Henisz, W.J., S. Dorobantu, and L. Nartey, 2011, Spinning Gold: The Financial Returns to Stakeholder Engagement, working paper.

Henisz, W.J., and J.T. Macher, 2004, Firm and Country Level Tradeoffs and Contingencies in the Evaluation of Foreign Investment: The Semiconductor Industry, 1994-2002, Organization Science, 15(5): 537-554.

Henisz, W.J., and B.A. Zelner, 2003, The Strategic Organization of Political Risks and Opportunities, Strategic Organization, 1(4):451-460.

Henisz, W.J., and B.A. Zelner, 2004, Explicating Political Hazards and Safeguards: A Transaction Cost Politics Approach, Industrial and Corporate Change, 13(6): 901-915.

Hmieleski, K.M., and J.C. Carr, 2008, The Relationship between Entrepreneur Psychological Capital and New Venture Performance, Babson College Entrepreneurship Research Conference, Frontiers of Entrepreneurship Research.

Hoburn, G.L.F., and R.G. Vanden Bergh, 2004, Influencing Agencies through Pivotal Political Institutions, Journal of Law, Economics, and Organization, 20(2): 458-483.

Holburn, G.L. and R. G. Vanden Bergh, 2008, Making Friends in Hostile Environments: Political Strategy in Regulated Industries, Academy of Management Review, 33(2): 521-540.

Holburn, G.L.F., and B.A. Zelner, 2010, Political Capabilities, Policy Risk, and Intl Investment Strategy-Evidence from the Global Electric Power Generation Industry, Strategic Management Journal, 31: 1290-1315.

Hoti, S. and M. McAleer, 2002, Country Risk Ratings: An International Comparison, Department of Economics, University of Western Australia.

Howell, L.D., 2001, The Handbook of Country and Political Risk Analysis, 3rd edition, Political Risk Services, United States.

Hymer, S. H., 1960, The International Operations of National Firms: A Study of Direct Foreign Investment, PhD Dissertation, published posthumously, MIT Press, 1976: Cambridge, MA.

Johanson, J. and J. Vahlne, 1977, The Internationalization Process of the Firm – A Model of Knowledge Development and Increasing Foreign Market Commitments, Journal of International Business Studies, 8(1): 23-32

Keillor, B.D., T. J. Wilkinson, and Deborah Owens, 2005, Threats to International Operations: Dealing with Political Risk at the Firm Level, Journal of Business Research, 58(5): 629-635.

Kim, C., C. Pantzalis, and J.C. Park, 2012, Political Geography and Stock Returns: The Value and Risk Implications of Proximity to Political Power, Journal of Financial Economics, 106: 196-228.

Kimmitt, R.M., 2008, Public Footprints in Private Markets, Foreign Affairs, 87(1): 119-130.

Klapper, L., C. Richmond, and T. Tran, 2013, Civil Conflict and Firm Performance, World Bank Policy Research Working Paper 6640.

Kobrin, S.J., 1979, Political Risk: A Review and Reconsideration, Journal of International Business Studies, 10(1): 67-80.

Kogut, B. and H. Singh, 1988, The Effect of National Culture on the Choice of Entry Mode, Journal of International Business Studies, 19(3): 411-432.

Kogut, B., and U. Zander, 1992, Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology, Organization Science, 3(3): 383-397.

Ksoll, C., R. Macchiavello, and A. Morjaria, 2010, The Effect of Ethnic Violence on an Export-Oriented Industry, CEPR Discussion Paper No. DP8074.

Luo Y., and H. Zhao, 2013, Doing Business in a Transitional Society: Economic Environment and Relational Political Strategy for Multinationals, Business Society, 52(3): 515-549.

Ma, J., and T. Khanna, 2013, Independent Directors' Dissent on Boards: Evidence from Listed Companies in China, Harvard Business School Strategy Unit Working Paper No. 13-089.

Ma, X., T.W. Tong, and M. Fitza, 2013, How Much Does Subnational Region Matter to Foreign Subsidiary Performance? Evidence from Fortune Global 500 Corporations' Investment in China, Journal of International Business Studies, 44: 66-87.

Mata, J., and E. Freitas, 2012, Foreignness and Exit over the Life Cycle of Firms, Journal of International Business Studies, 43: 615-630.

Mezias, J.M., 2002, Identifying Liabilities of Foreignness and Strategies to Minimize their Effects: The Case of Labor Lawsuit Judgments in the United States, Strategic Management Journal, 23: 229-244.

Moran, T.H., 1974, Multinational Corporations and the Politics of Dependence, Princeton University Press: Princeton, NJ.

Morck, R., B. Yeung, and W. Yu, 2000, The Information Content of Stock Markets: Why do Emerging Markets Have Synchronous Stock Price Movements?, Journal of Financial Economics, 58: 215-260.

Mukunda, G., 2012, Great Leaders Don't Need Experience, Harvard Business Review, 90(10): 30-31.

Oetzel, J., and K. Getz, 2012, Why and How Might Firms Respond Strategically to Violent Conflict, Journal of International Business Studies, 43(2): 166-186.

O'Grady, S., and H.W. Lane, 1996, The Psychic Distance Paradox, Journal of International Business Studies, 27(2): 309-333.

Perkins, S.E., 2014, When Does Prior Experience Pay? Institutional Experience and the Multinational Corporation, Administrative Science Quarterly, 59:145-181.

Rajan, R.G., and L. Zingales, 1998, Financial Dependence and Growth, American Economic Review: 559-586.

Samford, S. and P.O. Gomez, 2014, Subnational Politics and Foreign Direct Investment in Mexico, Review of International Political Economy, 21(2): 467-496.

Santangelo, G.D., and K.E. Meyer, 2011, Extending the Internationalization Process Model: Increases and Decreases of MNE Commitment in Emerging Economies, Journal of International Business Studies, 42(7): 894-909.

Sedik, W.M., and H. Seoudy, 2012, Impact of Country Risk and New Institutional Economics on Foreign Direct Investment: A Panel Data Analysis for MENA Region (1999-2010), Paper International Society for New Institutional Economics 2012

Shaver, J.M., W. Mitchell, and B. Yeung, 1997, The Effect of Own-Firm and Other-Firm Experience in Foreign Direct Investment Survival in the United States, 1987-92, Strategic Management Journal, 18: 811-824.

Siegel, J.I., A.N. Licht, and S.H. Schwartz, 2011, Egalitarianism and International Investment, Journal of Financial Economics, 102(3): 621-642.

Siegel, J.I., A.N. Licht, and S.H. Schwartz, 2013, Egalitarianism, Cultural Distance, and Foreign Direct Investment: A New Approach, Organization Science, 24(4): 1174-1194. .

Tong, H. and S. Wei, 2009, The Misfortune of Non-Financial Firms in a Financial Crisis: Disentangling Finance and Demand Shocks, NBER Chapers, in: Measuring wealth and Financial Intermediation and Their Links to the Real Economy National Bureau of Economic Research, Inc.

White, G.O. III, T. A. Hemhill, J.R.W. Joplin, and L.A. Marsh, 2014, Wholly Owned Foreign Subsidiary Relation-Based Strategies in Volatile Environments, International Business Reviw, 23:303-312.

Zaheer, S., 1995, Overcoming the Liability of Foreignness, Academy of Management Journal, 38(2): 341-363.

Table 1. Risky Countries, 2000–2010

Countries that reached the 75th percentile of political risk				Countries that did not reach the 75th percentile	
Afghanistan	Ecuador	Macedonia	Senegal	Australia	Lithuania
Albania	Egypt	Madagascar	Serbia	Austria	Luxembourg
Algeria	Eq. Guinea	Malawi	Seychelles	Bahamas	Malaysia
American Samoa	Eritrea	Maldives	Sierra Leone	Bahrain	Malta
Andorra	Ethiopia	Mali	Solomon Isl.	Belgium	Mexico
Angola	Faroe Islands	Martinique	Somalia	Botswana	Mongolia
Anguilla	Fiji	Mauritania	Sri Lanka	Brazil	Morocco
Antigua & Barbuda	French Guiana	Mauritius	Sudan	Brunei Darussalam	Namibia
Argentina	French Polynesia	Mayotte	Swaziland	Bulgaria	Netherlands
Armenia	Gabon	Micronesia	Syria	Burkina Faso	New Zealand
Aruba	Georgia	Moldova	Tajikistan	Canada	Norway
Azerbaijan	Gibraltar	Monaco	Thailand	Chile	Oman
Bangladesh	Greenland	Montenegro	Timor-Leste	China	Panama
Barbados	Grenada	Montserrat	Togo	Costa Rica	Poland
Belarus	Guadeloupe	Mozambique	Tonga	Croatia	Portugal
Belize	Guam	Myanmar	Turkey	Cyprus	Qatar
Benin	Guernsey	Nepal	Turkmenistan	Czech Republic	Romania
Bermuda	Guinea	Neth. Antilles	Turks & Caicos	Denmark	Saudi Arabia
Bhutan	Guinea-Bissau	New Caledonia	Uganda	El Salvador	Singapore
Bolivia	Guyana	Nicaragua	Ukraine	Estonia	Slovakia
Bosnia & Herzegovina	Haiti	Niger	Uzbekistan	Finland	Slovenia
Burundi	Honduras	Nigeria	Vanuatu	France	South Africa
Cambodia	India	N. Mariana Islands	Venezuela	Gambia	Spain
Cameroon	Indonesia	Pakistan	Yemen	Germany	Suriname
Cape Verde	Iran	Palau	Zambia	Ghana	Sweden
Central African Republic	Iraq	Palestinian Territories	Zimbabwe	Greece	Switzerland
Chad	Israel	Papua New Guinea		Guatemala	Taiwan
Cocos Islands	Jersey	Paraguay		Hong Kong	Tanzania
Colombia	Kenya	Peru		Hungary	Trinidad & Tobago
Comoros	Kiribati	Philippines		Iceland	Tunisia
Congo	Kyrgyzstan	Puerto Rico		Ireland	UK
Congo, Dem. Rep.	Laos	Russian Federation		Italy	UAE
Cook Islands	Lebanon	Rwanda		Jamaica	Uruguay
Cote D'Ivoire	Lesotho	Reunion		Japan	USA
Cuba	Liberia	Saint Kitts & Nevis		Jordan	Vietnam
Djibouti	Libya	Saint Lucia		Kazakhstan	
Dominica	Liechtenstein	Samoa		Kuwait	
Dominican Republic	Macau	Sao Tome & Principe		Latvia	

This country list was taken from the ICRG data over the period 2000-2010.

Table 2. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
log(capex)	3817	17.62	1.62	9.76	22.37
capex	3817	162,000,000	434,000,000	17,316	5,200,000,000
log(opex)	4618	18.78	1.53	12.27	23.07
opex	4618	483,000,000	1,170,000,000	213,902	10,400,000,000
political risk	5152	47.39	12.48	24	87
political risk (orthogonalized)	5152	-0.22	0.94	-1.98	2.76
operator longevity	5152	30.28	17.63	1	102
owner longevity	5152	21.98	13.50	1	85
owner age	5152	47.60	72.84	1	202
market risk length	5152	6.38	11.42	0	42
owner risk experience	5152	53.27	65.83	0	302
government ownership (%)	5152	0.23	2.93	0	49.5
market share	5152	0.35	0.18	0.00	1.00
financial risk	5152	16.11	4.88	4.83	45.00
market penetration	5152	0.70	0.42	0.00	2.11
GDP per capita	5152	16,627	17,797	111	112,029
GDP per capita (orthogonalized)	5152	0.96	2.89	0.10	49.50
majority group ownership (%)	5152	10.10	7.39	1	33
owner size	5152	0.11	1.08	-1.83	6.74
external financing dependence	3247	-2.84	13.26	-449.46	46.00
owner average penetration	5152	0.64	0.33	0.00	2.11
owner minimum penetration	5152	0.31	0.31	0.00	2.11
foreign owned	5152	0.67	0.47	0	1

Table 3. Correlations

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	log(capex)	1																					
2	capex	0.61	1																				
3	log(opex)	0.80	0.54	1																			
4	opex	0.61	0.83	0.69	1																		
5	political risk	-0.07	-0.04	-0.35	-0.18	1																	
6	political risk (orthogonalized)	-0.07	-0.04	-0.35	-0.18	1.00	1																
7	operator longevity	0.14	0.09	0.29	0.14	-0.05	-0.05	1															
8	owner longevity	0.19	0.28	0.28	0.27	0.01	0.01	0.40	1														
9	owner age	0.05	-0.05	0.10	-0.02	-0.01	-0.01	0.24	0.00	1													
10	market risk length	-0.09	-0.10	-0.29	-0.18	0.73	0.73	0.07	0.05	0.01	1												
11	owner risk experience	-0.08	-0.12	-0.11	-0.13	0.39	0.39	0.21	0.05	0.08	0.45	1											
12	government ownership (%)	0.26	0.39	0.21	0.20	0.06	0.06	0.11	0.27	-0.14	-0.02	-0.15	1										
13	market share	0.04	0.12	0.05	0.08	0.11	0.11	0.01	0.12	-0.03	0.09	0.09	0.22	1									
14	financial risk	-0.23	-0.17	-0.21	-0.09	0.11	0.11	0.04	-0.10	0.00	0.04	0.01	-0.25	-0.09	1								
15	market penetration	-0.06	-0.15	0.21	-0.04	-0.50	-0.50	0.25	0.31	0.05	-0.40	0.01	-0.18	-0.05	-0.04	1							
16	GDP per capita	0.10	0.05	0.37	0.24	-0.74	-0.74	0.16	0.08	0.07	-0.46	-0.21	-0.10	-0.13	-0.16	0.51	1						
17	GDP per capita (orthogonalized)	0.07	0.08	0.19	0.10	-0.14	-0.14	0.18	0.10	0.02	-0.06	0.02	0.06	-0.04	0.02	0.08	0.21	1					
18	majority group ownership (%)	-0.04	-0.15	0.03	-0.10	0.05	0.05	0.10	-0.05	0.05	0.15	0.68	-0.26	0.04	0.08	0.15	0.01	-0.06	1				
19	owner size	0.08	0.04	0.21	0.18	-0.14	-0.14	0.19	0.13	0.09	0.01	0.07	-0.09	-0.09	-0.13	0.28	0.77	0.17	0.06	1			
20	external financing dependence	0.27	0.05	0.04	0.03	-0.01	-0.01	-0.05	-0.06	-0.01	-0.05	0.02	-0.14	-0.10	-0.06	-0.04	-0.02	-0.01	0.04	-0.03	1		
21	owner average penetration	-0.04	-0.10	0.16	-0.01	-0.21	-0.21	0.28	0.45	0.15	-0.10	-0.05	-0.10	-0.08	0.03	0.68	0.33	0.07	0.10	0.28	-0.01	1	
22	owner minimum penetration	-0.08	-0.03	0.08	0.05	-0.23	-0.23	0.21	0.41	0.01	-0.15	-0.32	0.06	-0.06	0.05	0.48	0.29	0.11	-0.32	0.21	-0.03	0.76	1

Table 4. Long-term Investment Results

	General trends	Country-specific knowledge		General knowledge	Market risk knowledge	
		Operator Longevity	Owner Longevity	Owner Age	Market Risk Length	Owner Risk Experience
	1	2	3	4	5	6
VARIABLES	Dependent Variable = log(capex)					
Political Risk	-0.003 [0.004]	-0.012** [0.005]	-0.008* [0.004]	-0.017** [0.005]	-0.003 [0.004]	-0.003 [0.004]
Operator Longevity		-0.014* [0.006]				
Political Risk * Operator Market Longevity		0.000** [0.000]				
Owner Longevity			-0.011+ [0.006]			
Political Risk * Owner Market Longevity			0.000** [0.000]			
Owner Age				-0.010** [0.002]		
Political Risk * Owner Age				0.000** [0.000]		
Market Risk Length					0.005 [0.018]	
Political Risk * Market Risk Length					-0.000 [0.000]	
Owner Risk Experience						0.000 [0.001]
Political Risk * Owner Risk Experience						-0.000 [0.000]
Constant	17.380** [0.286]	17.626** [0.293]	17.492** [0.285]	17.955** [0.308]	17.320** [0.293]	17.379** [0.286]
Observations	3,835	3,835	3,835	3,835	3,835	3,835
Countries	106	106	106	106	106	106
Operators	202	202	202	202	202	202

Standard errors appear in brackets. ** p<0.01, * p<0.05, + p<0.1

Table 5. Operations Results

	General trends	Country-specific knowledge		General knowledge	Market risk knowledge	
		Operator Longevity	Owner Longevity	Owner Age	Market Risk Length	Owner Risk Experience
	1	2	3	4	5	6
VARIABLES	Dependent Variable = log(opex)					
Political Risk	-0.031** [0.002]	-0.057** [0.002]	-0.044** [0.002]	-0.036** [0.002]	-0.041** [0.002]	-0.037** [0.002]
Operator Longevity		-0.024** [0.003]				
Political Risk * Operator Market Longevity		0.001** [0.000]				
Owner Longevity			-0.043** [0.002]			
Political Risk * Owner Market Longevity			0.001** [0.000]			
Owner Age				-0.004** [0.001]		
Political Risk * Owner Age				0.000** [0.000]		
Market Risk Length					-0.090** [0.008]	
Political Risk * Market Risk Length					0.002** [0.000]	
Owner Risk Experience						-0.011** [0.001]
Political Risk * Owner Risk Experience						0.000** [0.000]
Constant	18.842** [0.177]	19.503** [0.173]	19.007** [0.170]	19.057** [0.187]	18.831** [0.177]	18.939** [0.172]
Observations	4,618	4,337	4,337	4,337	4,337	4,337
Countries	104	104	104	104	104	104
Operators	227	227	227	227	227	227

Standard errors appear in brackets. ** p<0.01, * p<0.05, + p<0.1

Figure 1

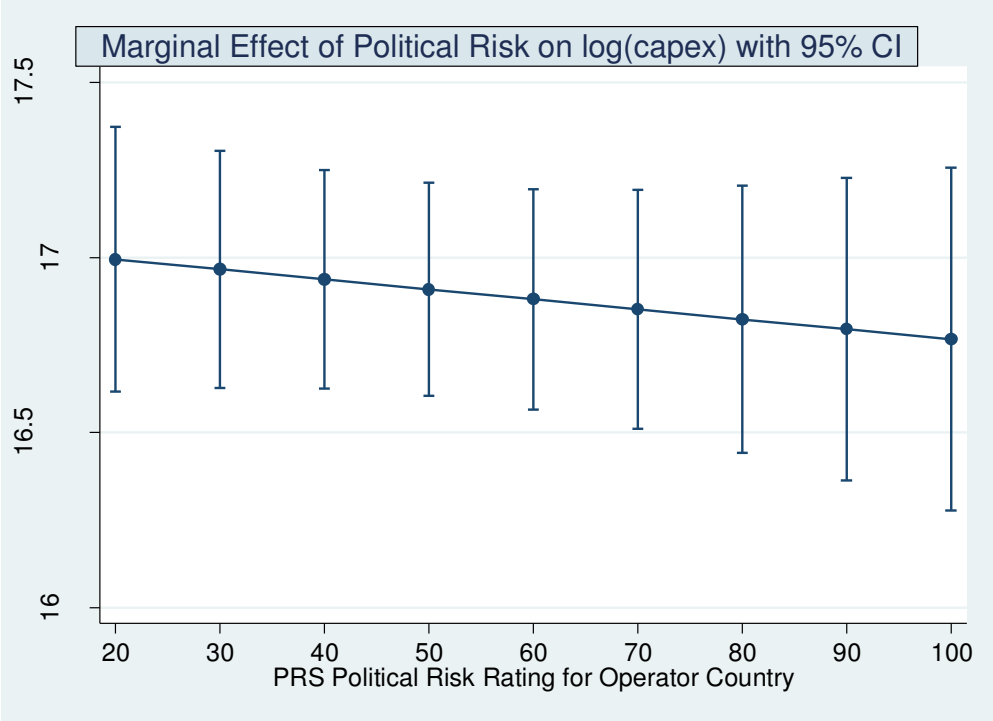


Figure 2

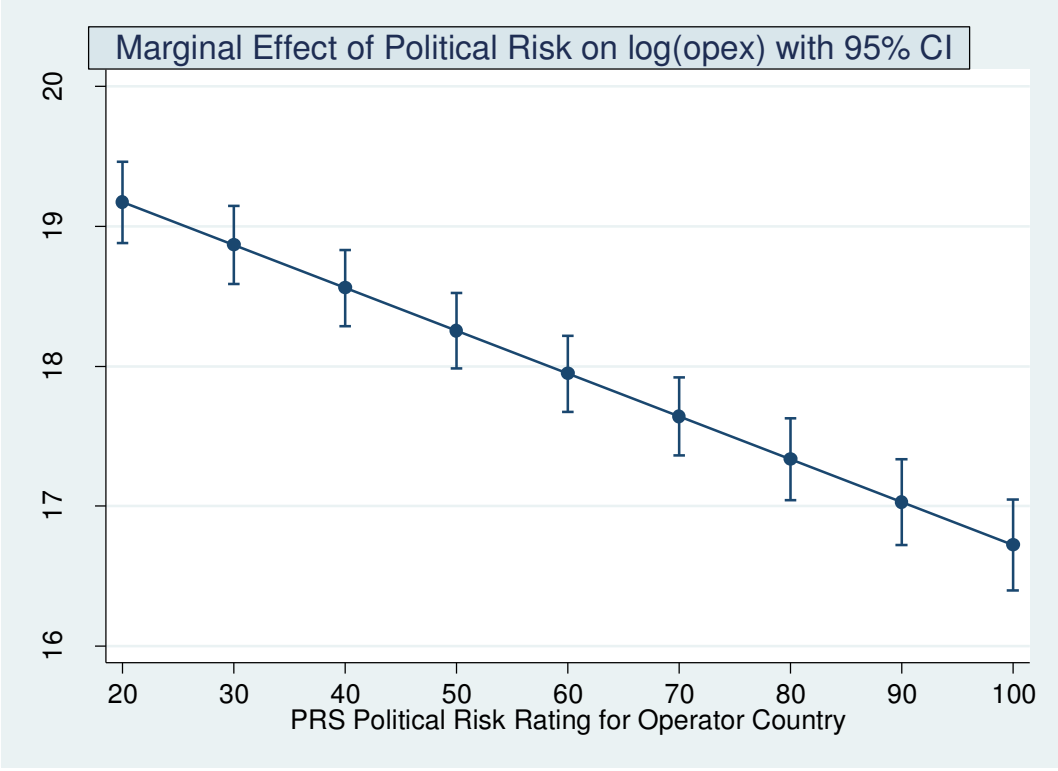


Figure 3

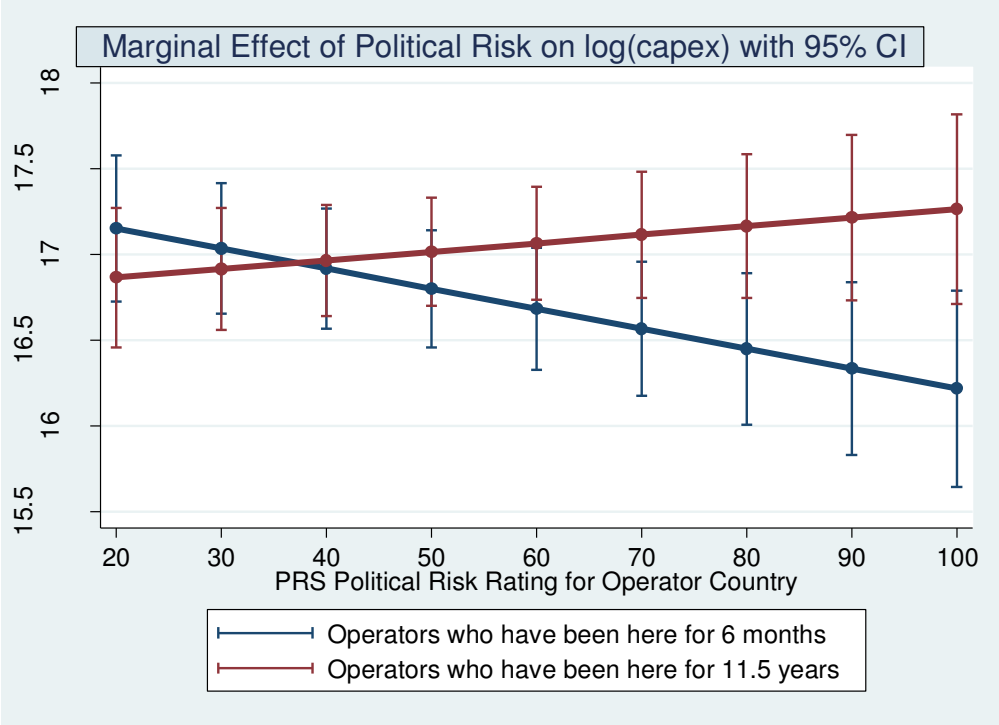


Figure 4

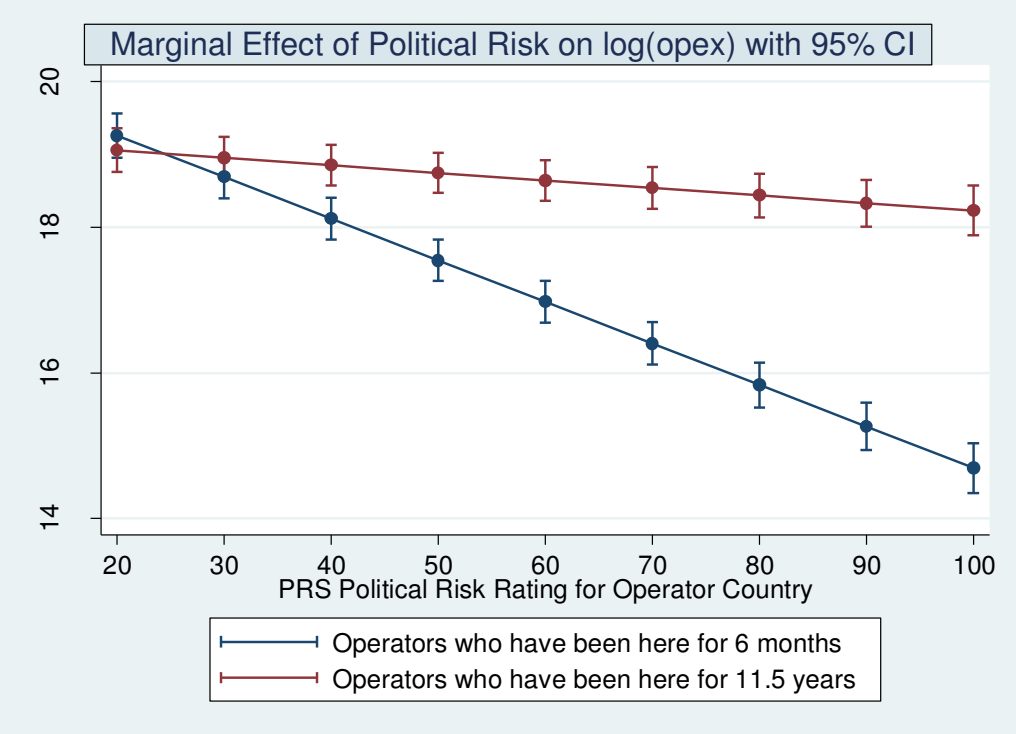


Figure 5

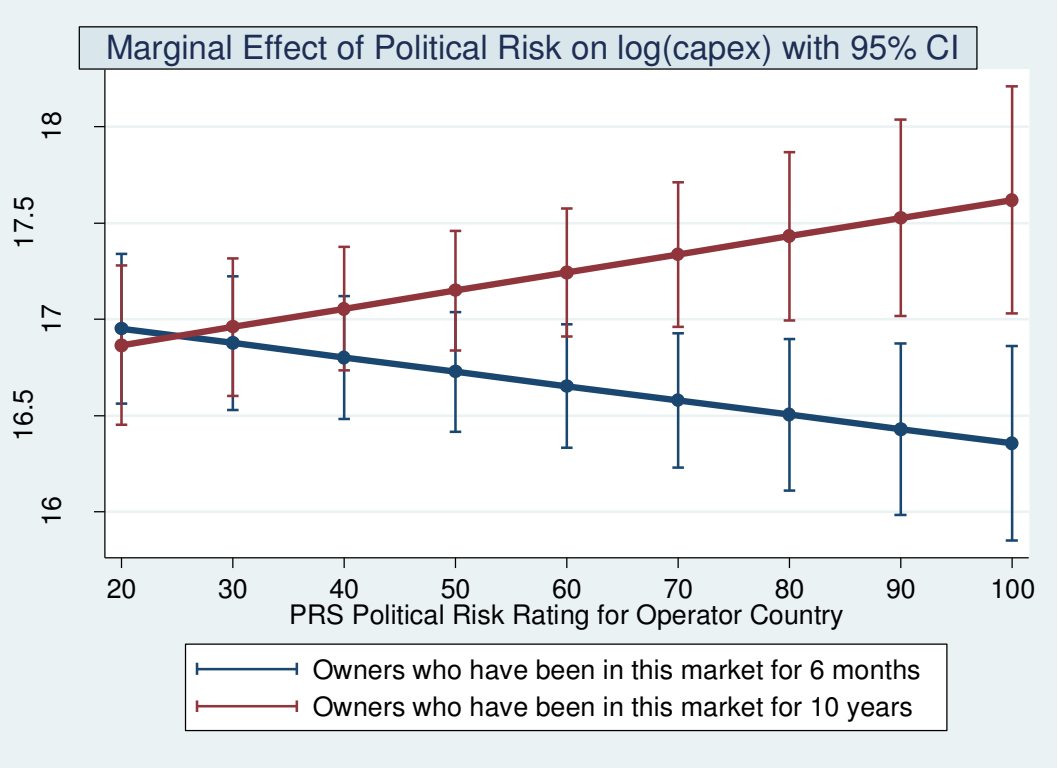


Figure 6

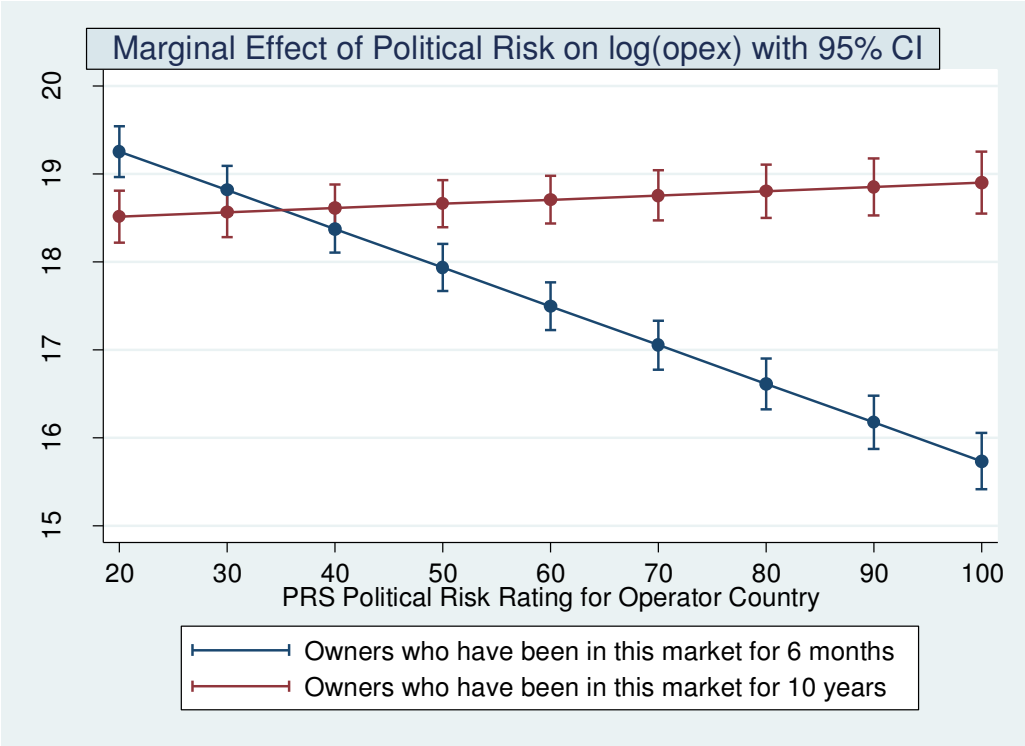


Figure 7

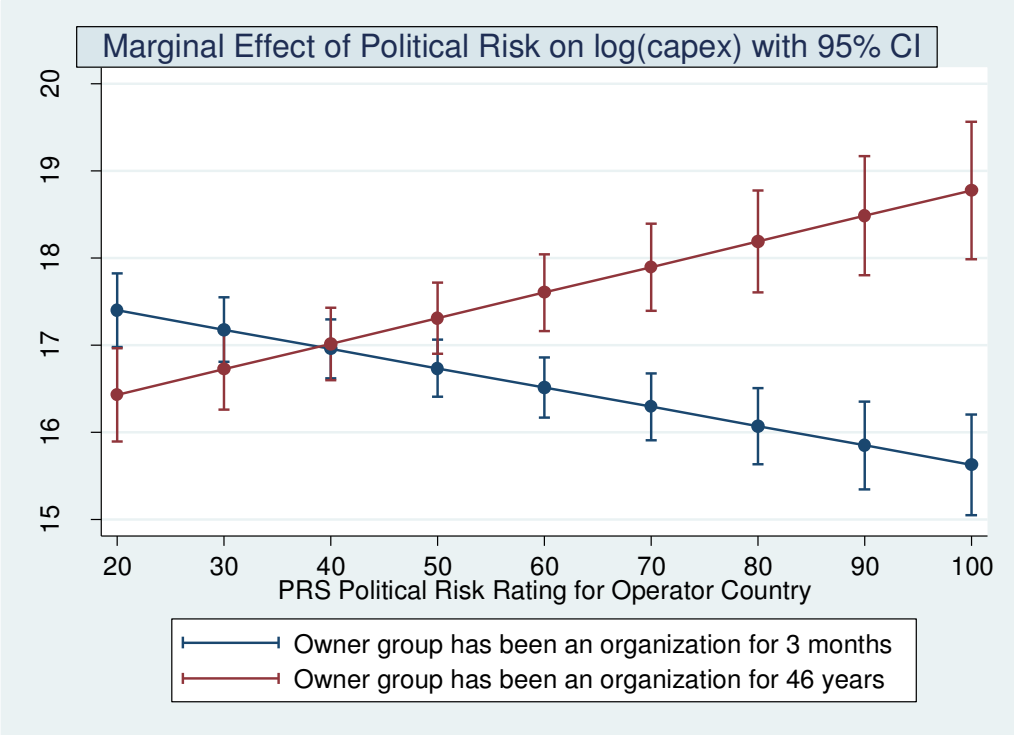


Figure 8

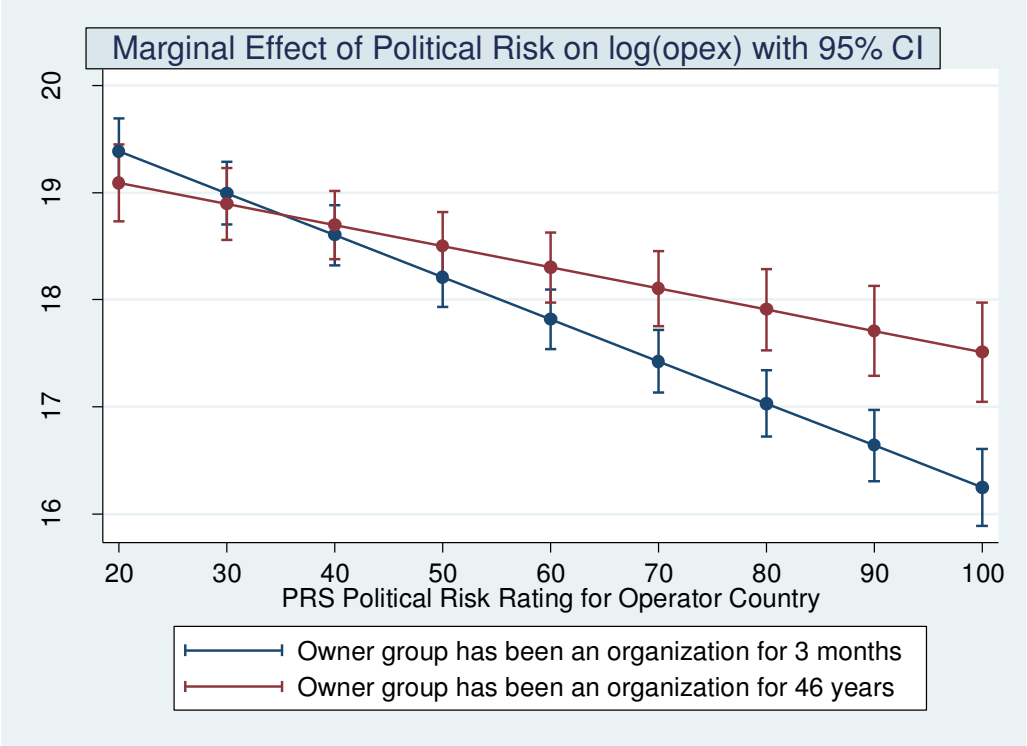


Figure 9

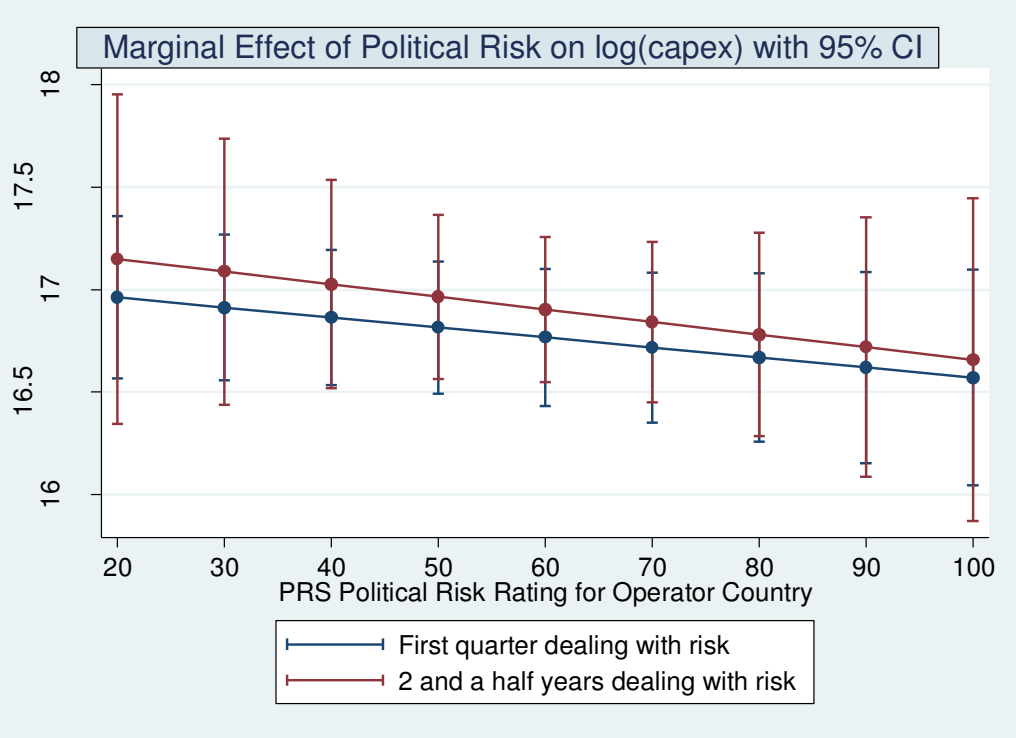


Figure 10

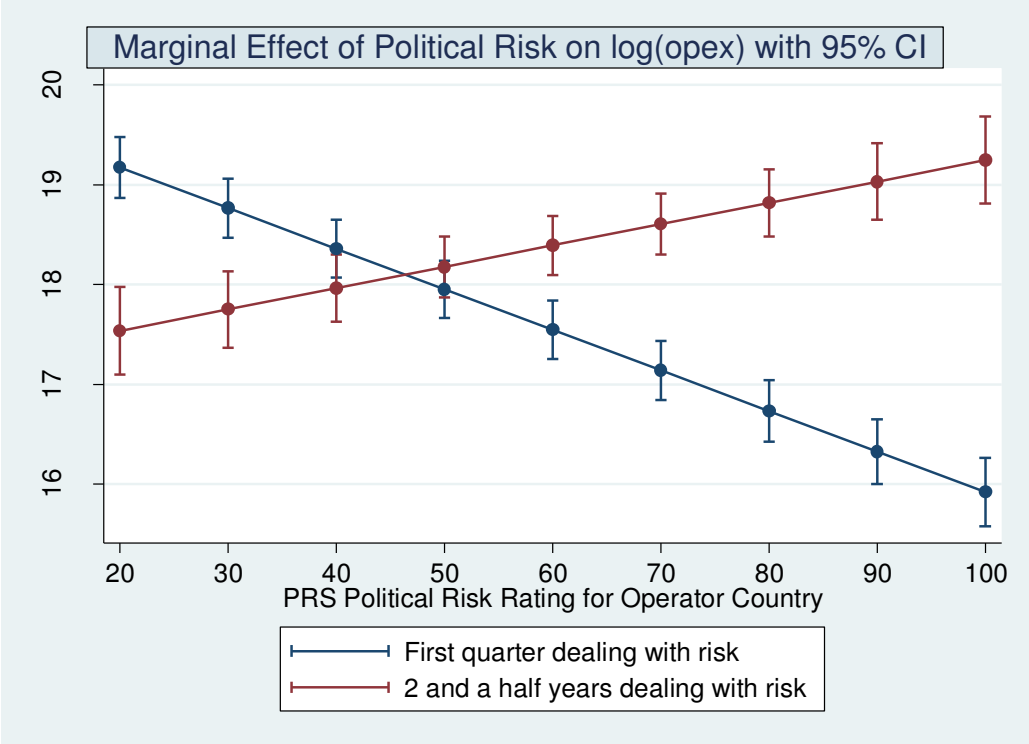


Figure 11

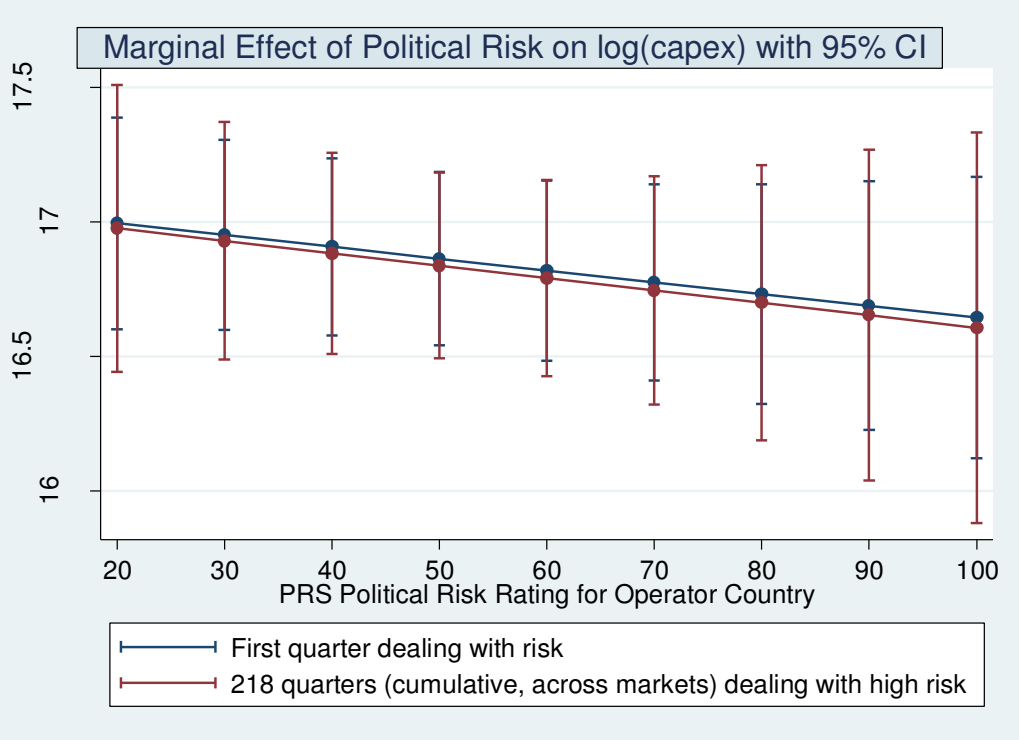
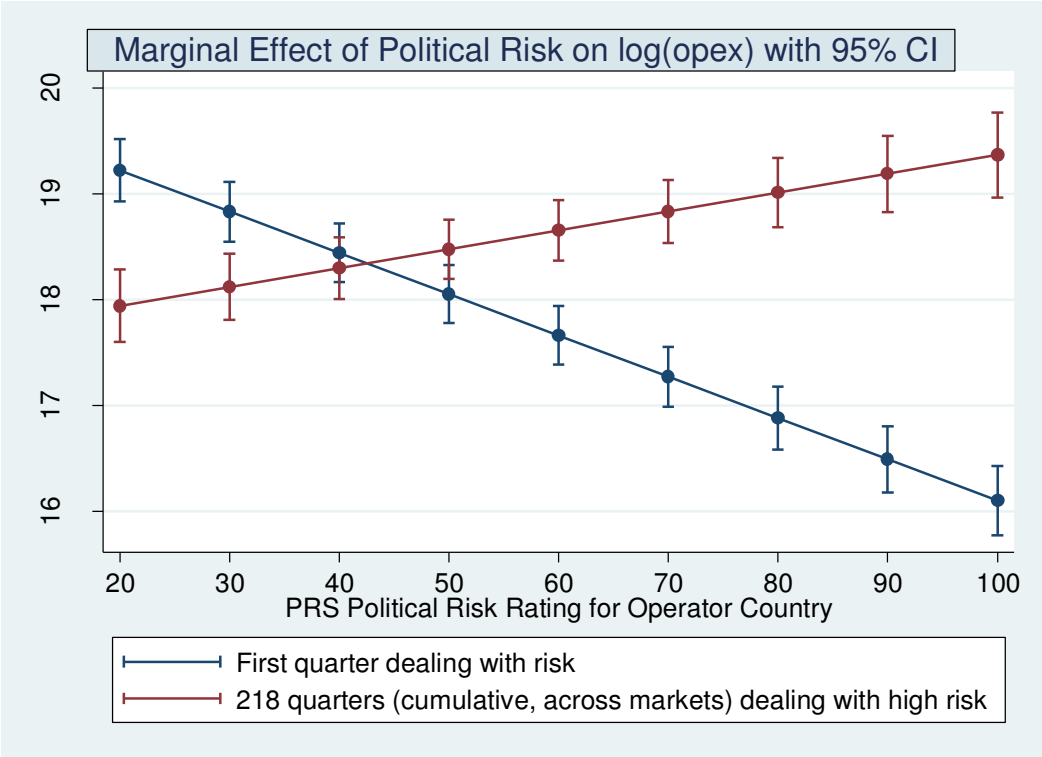


Figure 12



Appendix 1. Components of Political-Risk Scores Compiled by the PRS Group's International Country Risk Guide (ICRG)

The descriptions that follow are taken from the ICRG Methodology. The ICRG methodology awards the highest point counts to the safest countries; I reverse-coded this measure so that elevated scores reflect elevated risk.

Political Risk Score Components			
Components	**Sub-components**	**Description**	**Points**
Government Stability		An assessment of the government's ability to carry out its declared program(s) and of its ability to stay in office.	12
	Government Unity		4
	Legislative Strength		4
	Popular Support		4
Socioeconomic Conditions		An assessment of socioeconomic pressures that could constrain government action or fuel social dissatisfaction.	12
	Unemployment		4
	Consumer Confidence		4
	Poverty		4
Investment Profile		An assessment of factors affecting risk to investment that are not covered by other political, economic, and financial-risk components.	12
	Contract Viability/Expropriation		4
	Profits Repatriation		4
	Payment Delays		4
Internal Conflict		An assessment of political violence and its actual or potential impact on governance. The highest rating is given to countries where there is no armed or civil opposition to the government and the government does not indulge in arbitrary violence, direct or indirect, against its people. The lowest rating is given to a country embroiled in an ongoing civil war.	12
	Civil War/Coup Threat		4
	Terrorism/Political Violence		4
	Civil Disorder		4
External Conflict		An assessment of risk to the incumbent government from foreign action, ranging from nonviolent external pressure (diplomatic pressures, withholding of aid, trade restrictions, territorial disputes, sanctions, etc.) to violent external pressure (from cross-border conflict to all-out war). External conflicts can adversely affect foreign business in many ways, including restrictions on operations, trade and investment sanctions, distortions in the allocation of economic resources, and violent change in the structure of society.	12
	War		4
	Cross-border Conflict		4
	Foreign Pressures		4
Corruption		An assessment of corruption within the political system. Such corruption is a threat to foreign investment: it distorts the economic and financial environment; it reduces the efficiency of government and business, enabling people to assume positions of power through patronage rather than ability; and it introduces an inherent instability into the political process. The most common form of corruption met directly by business is financial corruption, in the form of demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans. Such corruption can make it difficult to conduct business effectively, and may even force the withdrawal or withholding of an investment. Our measure takes such corruption into account, but focuses more on actual or potential corruption in the form of excessive patronage, nepotism, job reservations, "favor-for-favor," secret party funding, and suspiciously close ties between politics and business. In our view these insidious sorts of corruption are potentially of much greater risk to foreign business in that they can lead to popular discontent and unrealistic and inefficient controls on the state economy, and can encourage development of the black market. The greatest risk is that at some point such corruption will become so overweening as to provoke a popular backlash, , or some major scandal will be suddenly revealed, resulting in a fall or overthrow	6

		of the government, a major reorganizing or restructuring of the country's political institutions, or, at worst, a breakdown in law and order, rendering the country ungovernable.	
Military in Politics		The military is not elected by anyone. Thus its involvement in politics, even at a peripheral level, is a diminution of democratic accountability. It also has other significant implications. The military might, for example, become involved in government because of an actual or trumped-up internal or external threat. Such a situation would imply the distortion of government policy in order to meet this threat, such as by increasing the defense budget at the expense of other budget allocations. In some countries the threat of military takeover can force an elected government to change policy, or cause its replacement by a government more amenable to the military's wishes. A military takeover or threat of a takeover may also represent a high risk if it indicates that the government is unable to function effectively and that the country thus is an uneasy environment for foreign businesses. A full-scale military regime poses the greatest risk. In the short term a military regime may provide new stability and thus reduce business risks. In the longer term the risk will almost certainly rise, partly because the system of governance will be become corrupt and partly because the continuation of such a government is likely to create an armed opposition. In some cases, military participation in government may be a symptom rather than a cause of underlying difficulties.	6
Religious Tensions		Religious tensions may stem from the domination of society and/or governance by a single religious group that seeks to replace civil law with religious law and to exclude other religions from the political and/or social process; the desire of a single religious group to express its own identity, separate from the country as a whole. The risks involved in these situations range from inexperienced people imposing inappropriate policies through civil dissent to civil war.	6
Law and Order		Law and order form a single component, but its two elements are assessed separately; each element is scored from 0 to 3 points. To assess the law element, the strength and impartiality of the legal system are considered; the order element is an assessment of popular observance of the law. Thus, a country can enjoy a high rating – 3 – in terms of its judicial system, but a low rating – 1 – if it suffers from a very high crime rate or if the law is routinely ignored without effective sanction (for example, widespread illegal strikes).	6
Ethnic Tensions		An assessment of the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where tensions are high because opposing groups are intolerant and unwilling to compromise. Higher ratings are given to countries where tensions are minimal, though such differences may exist.	6
Democratic Accountability		A measure of how responsive government is to its people. The less responsive it is, the more likely it is that the government will fall— peacefully in a democratic society, but possibly violently in a non-democratic one.	6
Bureaucracy Quality		The institutional strength and quality of the bureaucracy is a shock absorber that tends to minimize revisions of policy when governments change. High ratings are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. In these low-risk countries, the bureaucracy tends to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training. Countries that lack the cushioning effect of a strong bureaucracy receive low ratings because a change in government tends to be traumatic in terms of policy formulation and day-to-day administrative functions.	4

Appendix 2. Fixed Effects Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependent Variable = log(capex)						Dependent Variable = log(opex)					
VARIABLES	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
Political Risk	0.001	-0.008	-0.004	-0.017**	0.001	0.001	-0.031**	-0.057**	-0.044**	-0.037**	-0.041**	-0.038**
	[0.004]	[0.005]	[0.004]	[0.005]	[0.004]	[0.004]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Operator Longevity		-0.008						-0.022**				
		[0.007]						[0.003]				
Political Risk * Operator Longevity		0.000**						0.001**				
		[0.000]						[0.000]				
Owner Longevity			-0.008						-0.043**			
			[0.006]						[0.003]			
Political Risk * Owner Longevity			0.000**						0.001**			
			[0.000]						[0.000]			
Owner Age				-0.011**						-0.003*		
				[0.003]						[0.001]		
Political Risk * Owner Age				0.000**						0.000**		
				[0.000]						[0.000]		
Market Risk Length					0.013						-0.088**	
					[0.019]						[0.008]	
Political Risk * Market Risk Length					-0.000						0.002**	
					[0.000]						[0.000]	
Owner Risk Experience						0.000						-0.011**
						[0.001]						[0.001]
Political Risk * Owner Risk Experience						-0.000						0.000**
						[0.000]						[0.000]
Constant	17.923**	18.081**	17.971**	18.548**	17.815**	17.928**	19.210**	19.834**	19.457**	19.325**	19.300**	19.377**
	[0.245]	[0.256]	[0.244]	[0.294]	[0.253]	[0.245]	[0.116]	[0.111]	[0.108]	[0.139]	[0.110]	[0.110]
Observations	3,835	3,835	3,835	3,835	3,835	3,835	4,618	4,618	4,618	4,618	4,618	4,618
R-squared	0.102	0.106	0.113	0.112	0.103	0.102	0.580	0.650	0.642	0.583	0.641	0.623
Number of operator FE	202	202	202	202	202	202	227	227	227	227	227	227

Standard errors appear in brackets. ** p<0.01, * p<0.05, + p<0.1

Which Does More to Determine the Quality of Corporate Governance in Emerging Economies, Firms or Countries?

Andrea Hugill
Harvard Business School

Jordan Siegel
Harvard Business School[1]

ABSTRACT

Scholars of corporate governance have debated the relative importance of country and firm characteristics in understanding corporate governance variation across emerging economies. Using panel data and a number of model specifications, we shed new light on this debate. We find that firm characteristics are as important as and often meaningfully more important than country characteristics. In fact, 16.8% percent of firms in emerging economies have been able to exceed the 75th percentile of ratings in developed economies. Our results suggest that over recent years firms in emerging economies had more capability to rise above weak home-country institutions than previously suggested.

[1] Corresponding author can be reached at Soldier Field, Harvard Business School, Boston, Massachusetts 02163, jsiegel@hbs.edu. We thank Chris Poliquin and Chris Allen for research assistance, the CLSA staff for data assistance, as well as the Harvard Business School Division of Research for funding. All remaining errors are our own.

The corporate governance literature since Shleifer andVishny (1997) has shown both that country-level governance institutions matter for determining financial and economic development (La Porta et al., 1998; Wurgler, 2000; Beck, Levine, and Loayza, 2000; Acemoglu, Johnson, Robinson, 2001), but also that firms can differentiate themselves from their peers in the eyes of outside investors by borrowing foreign institutions (Coffee, 2002; Doidge et al, 2009; Siegel, 2005). But then which has been more important over time in determining the overall quality of corporate governance in emerging economies, the country-level effects or the firm-level effects? In other words, to what extent have emerging economy firms overcome the "weak institutions" problem through their own firm-level efforts to differentiate themselves from their peers? And to what extent have emerging economy firms attained the high quality corporate governance of the best-governed firms in developed economies?

Several papers have taken up these questions with mixed results. A number of scholars argue that the weak institutions in emerging economies are the strongest influence on or even the sole determinant of corporate governance practices of local firms (Krishnamurti, Sevic, and Sevic, 2006; Doidge, Karolyi, and Stulz, 2007; Klapper and Love, 2004). Doidge, Karolyi, and Stulz (2007) find that country variables explain 39-73% of the governance choices of firms, while firm variables explain only 4-22% of governance variance. Moreover, they argue that firm characteristics explain almost none of the governance variation in "less-developed countries" because the costs of adopting good governance outweigh the benefits in such locations. At the same time, other studies see important roles for both firm and country characteristics in determining local governance (Klapper, Laeven, and Love, 2006; Sawicki, 2009). Durnev and Kim (2005) argue that three specific firm variables, investment opportunities, external financing, and ownership structure, may be more important than country variables.

This debate in academic literature is kept fresh by the statistics on the corporate governance practices of firms in emerging economies. We find that, comparing the average scores of firms across the globe from 2000-2010 from the CLSA's (Credit Lyonnais Securities Asia) corporate governance rating, 16.8% of firms in emerging economies have average governance scores above the 75th percentile for developed economy firms and 45.5% of emerging economy firms have average scores above the 50th percentile. Looking at corporate governance scores from the Risk Metrics Group from 2003-2009, we see that 9% of emerging economy firms exceed the 75th percentile and 46.1% of emerging economy firms exceed the 50th percentile for developed economy firms. Overall, these statistics suggests that firms in emerging economies had the capacity to rise above their home country institutions and peer firms to achieve world class corporate governance over the last decade. In this study we aim to provide clarity as how to some firms in economies with weak institutions were able to achieve corporate governance ratings at the highest end of the spectrum and, in the process, we hope to shed further light on this firm-versus-country debate.

In this paper we use new data from three unique sources, Credit Lyonnais Securities Asia (CLSA), RiskMetrics, and FTSE. Single years of these data were all used in previous studies of this question, but such cross-sectional analysis has been shown to be unreliable for studies of governance when using OLS and fixed effects regressions (Black, Love, and Rachinsky, 2006). We update this cross-sectional analysis by using panel data spanning 4-11 years. We also apply several new methodologies to this question, using OLS with observable variables and fixed effects at the country and firm level, random effects, and Nested ANOVA. With this data and empirical analysis we find that, under the most conservative judgments, firms are as important as countries in explaining corporate governance in emerging economies. We often find that firms

are more important than countries, especially when we consider firm fixed effects. Therefore, our results cohere with those of Durnev and Kim (2005) who found an important role for investment opportunities, external financing, and ownership structure, but extend their work to show the additional importance of unobservable firm characteristics, seen in firm fixed effects. Our results contradict the most recent contribution to this debate from Doidge, Karolyi, and Stulz (2007) who argue that firm characteristics play little to no role in explaining corporate governance in emerging economies.

Our study targets corporate governance practices in emerging economies. We understand corporate governance as those measures that fuel growth by providing investors an assurance of a return on their investment, a definition offered by Shleifer and Vishny (1997). Corporate governance involves mechanisms that govern the actions of and interactions between firm managers, shareholders, board members, and stakeholders in an attempt to address issues such as principal-agent conflicts. High quality corporate governance controls these individuals, through regulation or firm policy, and protects investors. It is for this reason that investors are more willing to offer valuable financing or pay a higher equity price for firms with better governance (Chen, Chen and Wei, 2009). High quality corporate governance, thus, is valuable not just for investors but also for firms who may rely on external financing for valuable growth opportunities. It can help firms capitalize on opportunities in a variety of ways. Black and Khanna (2007) show how firm-level variables (growth and cross-listing) were able to amplify the firm value growth following corporate governance adoption in India (Black and Khanna, 2007). Similarly, Bae and Goyal (2010) show that when South Korea officially liberalized their equity market, firm-level variation in governance was strongly associated with greater stock price increase, foreign ownership, and higher rates of physical capital accumulation.

The implementation of corporate governance mechanisms is typically conveyed to potential investors through ratings by third-party research organizations. We use data from three of these third-party organizations: CLSA, Risk Metrics, and FTSE. These organizations monitor the behavior of firms across the world and score them on specific governance measures such as the independence of the board of directors and poison pill policies, etc. Individual scores are aggregated to form single scores for each firm in a given year. Ratings are especially useful in emerging economies when other signals of firm value are opaque and where potential investors may lack the cultural knowledge to understand local practices. Corporate governance ratings have been shown to causally increase a firm's value (Black, Jang, and Kim, 2006). Improving ratings should, therefore, be important to firms in emerging economies.

Emerging economies provide an ideal setting to explore the importance of firm and country characteristics in corporate governance because of their institutions. Typically, emerging economies are characterized by weak institutions such as poorly enforced regulatory systems, corruption, and minimal democracy. The effect of such incomplete institutions, however, is not fully understood. Weak institutions can impact a country's growth, and along with it, the ability of local firms to compete globally (La Porta et al, 1998; Wurgler, 2000; Beck, Levine, and Loayza, 2000; Acemoglu, Johnson, Robinson, 2001). Thus, institutions can restrict firm growth if barriers to competitiveness such as corruption are too strong. An alternative perspective sees institutions as important, but not as an impenetrable barrier to growth. This work finds other explanations for poor development, such as human capital (Gennaioli et al, 2013; Michalopoulos and Papaioannou, 2014). If institutions affect, but do not constrain firms entirely, it is possible that institutions can afford firms considerable latitude to move independently from home country peer firms. When there are no rules and firms cannot opt out

of in favor of other foreign rules, then firms are free to make their own decisions. Firms' capacity to adopt or borrow institutions from foreign locations has been shown to be a powerful predictor of firm success and growth (Coffee, 2002; Reese and Weisbach, 2002; Siegel, 2005, 2009; Doidge et al., 2009).

Our analysis provides evidence that firms in emerging economy were able to distinguish themselves above and beyond their home country peers in corporate governance ratings during the last decade. We show that both firm and country conditions are important for firms' corporate governance performance. Across our main two data sets we see that firm characteristics explain 33-50% of the corporate governance ratings' variance, and country characteristics explain roughly 11-28% of the variance, in emerging economies.[2] Conservatively, this allows us to say that firms and countries are equally important in explaining governance performance. In many models firm variables explain more of the governance variation than do country variables. The results for developed economies are markedly different. Firm characteristics explain only 15-19% of governance ratings variance in developed economies while country characteristics explain 46-57%.[3]

Within this general finding, we see a strong role for unobservable firm-level characteristics in explaining corporate governance in emerging economies. Captured in the firm fixed effects, the unobservable behavior of firms explains the most governance variation of any potential source including observable firm characteristics such as sales growth, observable

[2] This range comes from the regressions that involve both observable and unobserved firm and country characteristics in the form of fixed effects (OLS), random effect regressions, and nested ANOVA regressions. Firm effects contributed the least in the random effects model using the CLSA corporate governance score as the dependent variable. Firm effects explained the most variance in the random effects model using the Industry Corporate Governance Quotient (CGQ) as the dependent variable. We excluded results from the regressions using only observable characteristics without fixed effects because they explained far less of the variance overall.

[3] Country effects explained the most variance in the ANOVA model, using the Industry Corporate Governance Quotient (CGQ) as the dependent variable. Country characteristics explained the least variance in the random effects regression using the Index CGQ as the dependent variable.

country characteristics such as gross domestic product per capita, and unobservable country characteristics, captured using country fixed effects. The importance of unobservable firm characteristics suggests that the key mechanism behind emerging economy firm governance improvement is not something we can readily capture. While the exact source of the firm governance improvement is unclear, a recent International Finance Corporation survey identified several firm governance practices of particular interest to investors in emerging economies (Khanna and Zyla, 2012). These specific governance practices included both easy to capture variables such as board independence, but also hard to quantify concepts such as the willingness of management to meet with investors and the motivations of controlling group or management. Amorphous factors, received as impressions made by investors in emerging economy firms may speak to the unobservable firm characteristics driving the importance of firm fixed effects in our results.

While this IFC survey provides insight into the factors that may be captured in the firm fixed effects in emerging economies, it fails to explain why firms are as important as, if not more important than, countries in explaining corporate governance variation in emerging economies in contrast to developed economies. For this understanding we turn to work on motivational crowding out and its recent application to regulatory systems. Individual and firm behavior alike is influenced by both extrinsic and intrinsic motivation. Intrinsic motivation is internally-driven and includes personal goals such as self-improvement by groups or individuals; external motivation comes from rewards or fear of sanction by forces outside the group or individual. A number of studies have shown that, when applied to a setting where intrinsic motivation already exist, extrinsic motivation can remove intrinsic motivation, providing a "crowing out" effect (Deci and Ryan, 1985; Frey and Oberholzer-Gee, 1997; Gneezy and Rustichini, 2000). One

reason why extrinsic motivation can crowd out intrinsic motivation is that, when extrinsic incentives are at play, individuals cannot display their intrinsic motivation to others, in effect undermining the benefits of displaying intrinsic motivation (Frey, 2012). This thinking has recently been applied to regulatory institutions, such as those dictating corporate governance policies, and their power to crowd out intrinsic motivations (Atiq, 2014). In emerging economies, firms may be intrinsically motivated to attract outside investors and promote self-improvement through high-quality corporate governance. Yet in developed economies where corporate governance practices are highly regulated and arguably governed by extrinsic motivation, firms lack the potential to differentiate themselves from peer firms through additional corporate governance policies.

Our findings are important for both investors and firms in emerging economies. Investors will be able to observe corporate governance variation within countries and identify valuable investment opportunities. Also, firms should enjoy a sense of agency in their prospects for growth, unhampered by an environment with weak and incomplete governance institutions or low financial market development. During the last decade we show that these firms were able to use various processes to differentiate themselves from their home country institutions and peer firms. The remainder of this paper is organized as follows. We next explain our three data sources as well as the various methods we employ to prove our results. In the following section we explain the results of our models and robustness tests of our results. Lastly, we provide a discussion of the results and their implications as well as a conclusion.

DATA AND METHODS

We implement our analysis using two main data sets. The first data set comes from the Credit Lyonnais Securities Asia (CLSA), an independent research firm that tracked corporate governance measures for firms mostly in emerging economies during the last decade (2000-2010). The second data set is from the Risk Metrics Group, which gave industry and Index Corporate Governance Quotient (CGQ) scores from 2003-2009. Both of these data sets have been used in previous investigations of the importance of countries and firms for corporate governance practices in emerging economies. We also conduct our analysis on a third data set, FTSE's ISS Corporate Governance Index from 2005-2008, as a robustness test of our two main data sets. A precursor of the FTSE corporate governance scores we test was also used in previous studies, although the methodology and the score summary statistics are somewhat different. We did not include the S&P data used in previous studies, as S&P did not continue to give ratings beyond a single year for more than a few firms and we could not implement our panel data approach. Other firm variables besides the corporate governance scores come from Thomson Reuters' Worldscope database.

The CLSA corporate governance data was shared with investors annually in the company's "CG Watch" reports. These reports highlighted firms who had exceptional governance ("CG Stars") or firms which had fallen in their scores since the previous year. CLSA gave us complete access to all of their historical ratings data: 10 years of data from 2000-2010. Each firm's corporate governance score is composed of ratings on 57 different sub-measures (plus or minus a few depending on the year). These 57 sub-measures fall into the categories of discipline, transparency, independence, accountability, responsibility, fairness, and social awareness. In the final year of the CG Watch reports, CLSA included a measure for

environmental friendliness, "Clean and Green." Depending on the year, 475-1000+ firms were ranked along these metrics and given an aggregate corporate governance score, computed as the average of all the smaller measure scores. These scores compose 4,448 observations, 91% of which are from emerging economies.

Over the ten years that CLSA tracked corporate governance, the methods by which the rankings were gathered changed only slightly. Each year, the points awarded were determined by a firm's answers to a lengthy survey conducted by CLSA. Initially, each survey question was answered simply with yes or no; a single point was awarded for each yes and a zero for each no. Later, three more options were added: largely (0.75 points), somewhat (0.5 points), and marginally (0.25 points). Points for each category were then combined and weighted to produce the firm's final score. The exact weighting of each category changed only slightly over the years. In 2000, the first year the scores were computed, discipline accounted for 10% of the score while transparency, independence, accountability, responsibility, fairness, and social awareness each accounted for 15%. In 2007, when the Clean and Green category was introduced, responsibility was absorbed into another category; each of the remaining categories accounted for 15% while Clean and Green represented 10% of the final score.

The exact questions also changed over the years, increasing in number from 53 to 87; several were dropped and replaced with others. An example of a typical survey question is: "Does the company publish its full-year results within three months of the end of the financial year?" The summary statistics for the aggregate corporate governance measures and the firm

and country variables appear in Table I Panel A, and the correlations between the variables appear in Panel B[4].

[Insert Table I about here]

Our second data set comes from the Risk Metrics Group in connection with ISS Governance's Governance Risk Indicators (GRId). This data is the Corporate Governance Quotient (CGQ), called a quotient because the published scores given to firms compare them to other firms in the same index or industry. From 2003-2009, CGQ data ranked the corporate governance performance of over 2,200 companies worldwide, including all companies in the S&P 500, Russell 3000, MSCI's Europe, Asia and Far East and the S&P/TSX Composite, FTSE All-World Developed, and FTSE All-Share indices. Corporate governance ratings were computed using 63 different issues in four categories: board of directors, audit, antitakeover, and compensation/ownership. These 63 scores are combined into a single aggregate score for each firm. The aggregate score is then compared to the other company scores in the same index to produce the firm's index CGQ, and to other company scores in the same industry to produce the firm's industry CGQ. We implement our analysis using both versions of the CGQ, the Index CGQ and Industry CGQ. The source data for the raw company scores in the CGQ rankings comes from public disclosures (SEC EDGAR filings for U.S. companies), press releases, and corporate websites. It is compiled by RiskMetrics analysts. The summary statistics for these variables along with other firm and country variables appear in Table I, Panel C and the correlations between these variables appear in Panel D[5].

[4] We winsorized a number of variables in this data set to remove outliers, bringing in variables values at the 1st and 99th percentile when appropriate. Not all variables required winsorizing. The CLSA variables that have been winsorized are identified in Table I, Panel A.

[5] As in the CLSA data, we winsorized several variables included in the CGQ regressions at the 1st and 99th percentiles to remove outliers. A complete list of the CGQ variables that have been winsorized can be found in Table I, Panel C.

In addition to our two main data sets, we also explored trends in data from FTSE & ISS's Corporate Governance Index. Our main intention in including this data was to ensure a thorough comparison with results from previous studies. FTSE calculated a corporate governance index for firms around the world from 2005-2008 called the FTSE ISS Corporate Governance Index (CGI) Series. This index was composed of countries from their Developed CGI, Europe CGI, Euro CGI, Japan CGI, UK CGI, and the US CGI. Scores for the index were calculated several times a month for all companies. We used the average from an entire year's worth of scores. The FTSE data was heavily dominated by developed economy firms. Only 6.2% of the observations come from emerging economies and only three countries are represented: Hong Kong, Singapore, and Thailand. The developed economies, on the other hand, are well represented. Summary statistics and correlations for these data can be found in Appendix 7.

Throughout much of our analysis, we differentiate between emerging and developed economies due to the unique trends for the two types of markets. To operationalize the categories of emerging and developed economies, we relied on a definition established in previous research by Lim and Tsutsui (2012). This work identifies developed economies as any country that had OECD membership in 1990; emerging economies are those that were not members of the OECD by 1990. The CGQ data also included several small island nations such as Bermuda and the Cayman Islands. These countries are commonly understood as tax havens and had no OECD membership in 1990, so they were all classified as emerging.[6] The breakdown of the countries between emerging and developed economies can be found in Appendix 1 where the CLSA and CGQ data is also separated[7].

[6] Robustness tests of our results where we run our models on data that excludes the tax havens can be found in Appendix 6.

[7] We also considered emerging economy lists published by FTSE, S&P, Internet Securities, Inc., and Dow Jones, as well as the countries grouped as "The Next Eleven/BRIC". In the end, we chose the OECD membership definition

The nationality of firms, or their home country, was determined by the firm's location in the data. Thus, we take the location originally listed by the corporate governance reporting organization, CLSA, Risk Metrics, or FTSE. Firms with headquarters in a given country are typically listed in that country, however, we also have several international subsidiaries of multinational firms in our data set. These subsidiaries are given a unique location from their headquarters if they operated independently and were traded under different tickers from their parent company in the other location. We confirmed the independence of international subsidiaries by using the Directory of Corporate Affiliations (DCA). No firms or subsidiaries in our data set changed location during the years of the data. As a robustness test, we also assess the importance of being part of a multinational.

Empirical Design

We estimate the sources of corporate governance ratings variation using ordinary least squares, fixed effects, random effects with maximum likelihood estimation, and nested ANOVA models. For our OLS models we apply variance decomposition methods, which have been used in a variety of settings to look at the contribution of firm and industry in shaping performance of firms (Bowman and Helfat, 2001; McGahan and Porter, 1997; and Rumelt, 1991) and at the importance of CEO's on firm performance (Lieberson and O'Connor, 1972; Wasserman et al. , 2001; and Crossland and Hambrick, 2007). Given that our data is hierarchical, with firms nested inside countries, we run our variance decomposition models sequentially. This means that we add in sets of explanatory variables in each model and subtract earlier Adjusted-R^2 amounts from the current Adjusted-R^2 amount. Sequential analysis of Adjusted-R^2 allows us to isolate the

---

for its ability to classify all countries in our data set as either emerging or developed. It is also the most moderate of the lists, with close to the mean number of emerging economies across lists, and it avoids many of the outliers present in other lists.

additional contribution to variance explained from a particular set of explanatory variables. In our setting, this allows us to identify the importance of different firm and country characteristics. We use the adjusted version of R^2 because we have a large number of firm fixed effects and we do not want the number of variables to bias our results.

One of the drawbacks to sequential variance decomposition is that the outcome relies on the order of variables included. At times, this order can be up for debate and the variance explained may not be the results of the new set of variables added. However, the hierarchy within our data is clear: firms are located inside countries. Yet, to be sure of our results, we also run a random effects model, which accounts for the hierarchy in the data in a single model.[8] Random effects models are a type of hierarchical linear models (HLM), which were introduced to the strategy literature by McNamara, Deephouse, and Luce (2003). They have been used in several studies since to analyze nested, or hierarchical data because of their ability to recognize that members of lower-level groups (firms, in this paper) may not be independent from each other (Hofmann, 1997).

Random effects allows us to model the total variance into three main components: the contribution of countries, the contribution of firms nested within countries, and the residual, or the unexplained leftover variance. Instead of putting dummies into the regression, as the fixed effects models do, random effects regression models the variance structure and then uses maximum likelihood methods to estimate the model. Sometimes, random effects models are called "mixed models" because they include both fixed effects and random effects parts. The fixed effects components are the regressors included in addition to the country, firm, and residual random effects. For our model, the fixed effects component is simply the year fixed effects. The random effects measure how country means vary from the overall data mean, and then how

[8] We employ Stata's xtmixed command to run this random effects model.

much firm means vary from country means. The greatest advantage of this random effects approach is that it does not rely on the sequence of factors as they included—it is a single, simple model to estimate hierarchical data.

Our Nested ANOVA models similarly rely on a sequential analysis of the Adjusted-R^2 models, as our OLS models did. This version of ANOVA is called "Nested" because it accounts for the fact that the nominal variables (the subgroups, or firms in our study) is found in combination with only one of the higher level nominal variables (countries in our study). Thus, it is simply an extension of basic one-way ANOVA that includes the hierarchical structure of the subgroups. The ordering of our subgroups gives us the ordering of our regressions: first we look at the contribution to variance explained by years, then we include countries, and then firms. The use of these methods together has been preceded by other work. Short et al. (2007) also analyze hierarchical data and similarly rely on the three methods we employ here: variance decomposition, hierarchical linear models (HLM), and ANOVA.

Our OLS sequential variance decomposition models explore two distinct types of variables: observable and unobservable. Observable characteristics include variables such as the firm's log of assets and the country's GDP per capita. Unobservable characteristics are captured using country and firm fixed effects. We include unobservable characteristics, or fixed effects, along with observable characteristics in several of our models. All firm and country variables included in the models change over time so they do not present problems of collinearity with our firm fixed effects.

We improve on existing work by including a variety of observable firm characteristics that have not been explored in previous studies. The variables that have been looked at before were appropriate but somewhat limited in number, a fact that could explain their narrow ability

to explain governance variance. This limited, original set of firm variables are: Sales Growth, Financial Dependence, which measures dependence on external financing, Closely Held Shares, Log(Assets), and Cash/Assets. In order to have a more robust understanding of what observable firm characteristics are contributing to governance, we identified and included 20 additional firm variables. These variables are intuitively relevant for understanding governance choices. The full list of these variables, along with their summary statistics and correlations, can be found in Table I for the CLSA and CGQ data and Appendix 7 for the FTSE data. Some examples include: R&D intensity (measured as R&D expenditure as a % of sales), return on assets, and foreign sales. The observable country characteristics included match those used in previous studies such as Doidge, Karolyi, Stulz (2007). Specifically, we used Antidirector x Legal, which interacts the country's Revised Anti-director Rights Index with the Rule of Law in the country, GDP per capita, and Stock Market Cap/GDP.

Model Specifications

Our regression equation that looks just at observable country characteristics (Model 2) can be written out as:

$$MODEL\ 2: \quad Score_{i,t} = \beta_0 + \beta_1(Antidirector\ Rights\ Index \times Rule\ of\ Law)_{i,t} + \beta_2(GDP\ per\ capita)_{i,t} + \beta_3\left(\frac{Stock\ Market\ Cap}{GDP}\right)_{i,t} + \gamma_t + \varepsilon_{i,t}$$

The dependent variable is always the relevant corporate governance score for the company i in year t. Year fixed effects are captured in γ_t. Our next model, Model 3, looks at the additional Adjusted-R^2 contributed by observable firm characteristics—specifically those observable firm characteristics that have been explored in previous work. Thus, for Model 3 we include both observable country and five observable firm characteristics:

$$MODEL\ 3:\ Score_{i,t} = \beta_0 + \beta_1(Antidirector\ Rights\ Index \times Rule\ of\ Law)_{i,t} + \beta_2(GDP\ per\ capita)_{i,t} + \beta_3\left(\frac{Stock\ Market\ Cap}{GDP}\right)_{i,t} + \beta_4\ (SalesGrowth_{i,t} + \beta_5(Financial\ Dependence)_{i,t} + \beta_6(Closely\ Held\ Shares)_{i,t} + \beta_7\big(Log(Assets)\big)_{i,t} + \beta_8\left(\frac{Cash}{Total\ Assets}\right)_{i,t} + \gamma_t + \varepsilon_{i,t}$$

In Model 4 we simply add the 20 additional firm variables. In Model 5 we switch to look at fixed effects. First we look just at all stable characteristics of countries, represented here with a unique intercept for each country (α_j). In Model 6 we add the observable country characteristics we had in Model 2. In Model 7 we include firm fixed effects, or a unique intercept for each firm (ρ_i):

$$MODEL\ 7:\ Score_{i,t} = \beta_0 + \beta_1(Antidirector\ Rights\ Index \times Rule\ of\ Law)_{i,t} + \beta_2(GDP\ per\ capita)_{i,t} + \beta_3\left(\frac{Stock\ Market\ Cap}{GDP}\right)_{i,t} + \alpha_j + \rho_i + \gamma_t + \varepsilon_{i,t}$$

In Models 8 and 9 we add the firm variables we had in Models 3 and 4 respectively. Finally, in Model 10 we evaluate our data using random effects, giving a unique intercept for each country as well as a unique intercept for each firm. Here, we separate the variance of our observations into three portions simultaneously, the country variance (U_j), the firm variance ($U_{j,i}$), and the remaining variance ($\varepsilon_{j,i,t}$).

$$MODEL\ 10:\ Score_{i,t} = \beta_0 + \gamma_t + U_j + U_{j,i} + \varepsilon_{j,i,t}\ .$$

RESULTS

Over our three main dependent variables (CLSA cgscore, Index CGQ, and Industry CGQ) firm characteristics in emerging economies explain 33-50% of the ratings' variance while country characteristics explain only 11-28%.

Emerging Economies

The results from the CLSA emerging markets data are found in Table II. Model 2 shows that by adding country variables on top of years (comparing the Adjusted- R^2 to that in Model 1) we can explain an additional 5% of the ratings variance. Adding the limited set of firm variables does not add any explanation of variance in Model 3 (comparing it to Model 2), but the contribution of firms changes when we include the expanded set of firm variables in Model 4 (again comparing it to Model 2). Here, all observable firm characteristics explain 8% of the ratings variance, an overall greater figure than the 5% explained by countries.

[Insert Table II about here]

In Models 5-9 we build in the unobservable country and firm characteristics using fixed effects. Model 6 adds unobservable country characteristics and finds that only an additional 15% of the ratings variance is explained (compared to Model 1). In Model 7, however, we see a 40% jump in variance explained (compared to Model 5), by adding firm fixed effects on top of country fixed effects. Including the observable firm characteristics in Model 8 on top of the firm and country fixed effects (comparing it to Model 6) contributes only a little to variance explained. In Model 9 where we look at all unobservable and observable firm characteristics (compared again to Model 6), firms contribute 42% on top of what countries explain.

The random effects model, Model 10, confirms that firms are more important in emerging economies using a single model. The country random effect explains 26.8% of the variance while firms explain 37.3%[9]. The random effects for firms and countries, however, are

[9] To calculated random effects, we first square the standard deviation regression outputs for country, firm, and residual. We then add those variances together and divide the variance of one category by the total variance. Therefore, for this model the total variance is $7.87^2+9.28^2+9.1^2=230.9$. Therefore, the variance explained by

not statistically significantly different, given the standard errors are too large. In Panel B we find the Nested ANOVA results, which were consistent with the strongest results from Panel A. Analyzed sequentially, we see that firms explain 41.4% while countries explain only 11.7% of ratings variance.

The emerging economy results from the CGQ data, found in Table III, are analyzed similarly. In Panel A and Panel B we present the results from the OLS and random effects regressions for the Index CGQ and the Industry CGQ, respectively. In Model 2, observable country variables explain 10% of the Index CGQ and 8% of the Industry CGQ variance (as compared to Model 1). The limited set of firm variables contribute little in Model 3 (as compared to Model 2), as can be seen by the negative contributions to Adjusted-R^2. In Model 4, however, the full set of firm variables contributes 10% to the Index CGQ while the Industry CGQ gets an additional 13% explained (compared to Model 2). In Model 6 (compared to Model 1) unobservable and observable country characteristics explain 19% and 15% of the Index CGQ and Industry CGQ, respectively. Unobservable firm characteristics in Model 9, explain 34% and 38% of the variance (compared to Model 6).

[Insert Table III about here]

The random effects results in Model 10 show that firms in emerging economies explain 37.84% while countries explain only 28.33% for the Index CGQ variance. For the Industry CGQ, firms explain 50.4% and countries explain 10.98% of the variance. The results are statistically significant for the Industry CGQ only. The results from the Nested ANOVA regressions are in Panels C and D of Table III. The additional variance explained by firms in

---

countries is $7.87^2/230.9=26.8\%$; the variance explained by firms is $9.28^2/230.9=37.3\%$; and the residual, or unexplained variance is $9.1^2/230.9=35.9\%$.

these Nested ANOVA tests is 34.62% for the Index CGQ and 40.52% for the Industry CGQ. For countries, the additional variance explained is only 16.15% and 11.54%, respectively.

Developed Economies

[Insert Table IV about here]

Panels A and B of Table IV present the OLS and random effects models for the Index and Industry CGQ's developed economies. In Model 2 we see that country variables alone explain 38% of the variance for the Index CGQ and 42% of the Industry CGQ (as compared to Model 1). Both the limited and the additional firm characteristics found in Models 3 and 4 explain far less of the variance, from 1-5% (compared to Model 2). In Models 5-9 we include the unobservable country and firm characteristics in developed economies and again the same pattern emerges. In Model 6 (compared to Model 1) unobservable and observable country characteristics explain 56% and 57% of the variance for the Index and Industry CGQ, while unobservable and observable firm characteristics in Model 9 explain only 13% and 11% respectively (compared to Model 6).

In Model 10 of Panels A and B the random effects results from developed economies are shown. These calculations yield similar results for both the Index CGQ and the Industry CGQ. Firms explain roughly 19% while countries explain 46-48% of the governance variance. In the Nested ANOVA models countries explain approximately 56% of the variance for both the Index and Industry CGQ while firm explain roughly 15% for both. In summary, firm characteristics explain 1-15% of the variance in developed economies while countries explain substantially more, 38-57%.

Robustness Tests

We test our results further using a variety of robustness checks. The tests specifically explore the importance of multinationals, corrupt regime relationships, specific county dominance of our data, the distribution of emerging and developed economy scores, the importance of industry, and finally how our methodology and results cohere with two additional data sets that cover country governance indicators and firm governance practices.

In the CLSA data, 26 of observations come from multinational corporations. These firms either have independent subsidiaries in markets, which are evaluated as local firms, or they are evaluated at the country of their headquarters. Multinational subsidiaries are traded under unique tickers, but still they often bear the name of a multinational company and may have varying levels of influence by their corporate headquarters. To understand the importance of being a multinational in an emerging economy, we match all companies in the CLSA data set to those firms listed in the Directory of Corporate Affiliations (DCA). We first look at whether these firms are multinationals and how many subsidiaries are controlled by their parent company. The number of subsidiaries varies from 0 to 91. The average number of subsidiaries is 1.7 with a standard deviation of 7.6. Using our DCA matching to distinguish multinationals and single-market firms, we next run our models for both sets of firms in emerging economies. The results from these models can be found in Appendix 2. Across the board, we see that the effect of firm characteristics is stronger for emerging economy multinationals. For non-multinationals in emerging economies, company characteristics are still slightly more important than country characteristics, but the effect is smaller than for emerging economy firms.

We also consider the possibility that firms in emerging economies may feel different pressures if they are exposed to additional disclosure and liability requirements in the United States. To test this possibility, we run all models and include an SEC compliance variable from

Worldscope. This dummy variable is coded 1 if firms are determined by Thomson Reuters to be in SEC compliance and 0 if not. The original sources are the annual SEC lists of compliant non-U.S. companies for each year. The variable, SEC compliance, captures firms that opted into the supposedly tougher U.S. regulatory regime. SEC compliance, therefore, should capture firms that are looking to improve their financing possibilities through better governance. Firm-year observations with SEC compliance accounts for roughly 10% (383 observations) of the CLSA data and 12% (1,832 observations) of the CGQ data. Our results show that the SEC compliance variable is never significant for the emerging economy-dominated CLSA data, and is only significant occasionally for the developed economy-dominated CGQ data. We then compare the explanatory power of our models with and without the SEC compliance variable. In all cases, including or excluding this variable does not change our results significantly. The Adjusted-R^2 of the models changes by less than one one-hundredth of a point when we include the SEC compliance variable.

In dividing the data into emerging and developed economies, there is a risk that a specific country or type of country was responsible for the different trends in the CGQ data and in developed economies. The CGQ methodological design, after all, was initially designed to look just at U.S. companies. To test this question, we run our models again, this time excluding countries individually, then two at a time, then three at a time and then four at a time. We examine these results to see if excluding certain countries affects the relative importance of countries as compared to firms. We look first at developed economies. We find that no combination of countries remove countries as the more important predictor of corporate governance ratings in this setting. Yet, certain combinations do weaken the effect. Specifically, excluding Japan and the United Kingdom together show the most dramatic decrease in the

relative importance of countries. When the models are run on all developed economies without the UK and Japan the firm effect is larger. These two countries are also the two largest sets of observations in the developed economies data set. Japan composes 4,145 observations of the 13,977 developed economy observations, while the United Kingdom is another 3,022. Interestingly, their average scores differ considerably. For the Index score, Japan has an average score of 28.3 while the average score for the UK is 83.7.

As a test of our findings about developed economies, we run the models on all developed economy observations except for the UK and Japan for both the Index CGQ as well as the Industry CGQ. These results can be found in Appendix 3. We see that the importance of countries drops and the importance of firms rises only slightly. To determine if there was a pattern where the worst firms in the UK and Japan are rated higher than elsewhere, perhaps because of analyst biases, we look at the skewness and kurtosis of other countries. Looking only initially at the Index CGQ we find that the average skewness for all developed economies is -0.01 while the average kurtosis is 1.8. The United Kingdom has the longest left tail for its distribution at -1.7. Most other countries range between -0.5 and 0. Japan was slightly positive at 0.7. The kurtosis was somewhat starker, however. Most developed economies' skewness range between 1 and 3. Japan is close at 3.2, but the United Kingdom is up at 9.0. This suggests that the distribution for the UK firms could be driven by infrequent, extreme, and positive deviations from the average. In other words, the United Kingdom is getting the highest scores of any country. Whether this is because UK firms include some of the corporate governance stars or whether analysts are biased towards particular UK firms is difficult to tell from this analysis. Still, the results here are consistent with our overall findings.

We next consider whether developed economy firms are simply at the corporate governance quality frontier while emerging economy firms range from the lowest to the highest governance performance. To explore this possibility, we compare the means and variances for all of our corporate governance scores. We find that the mean rating for developed economy firms is higher, but not significantly higher than it is for emerging economies. Specifically, for the CLSA data, the mean for emerging economies is 54 while it is 58 for developed economies. In the CGQ data, the mean for emerging economies' index scores is 48, while the developed economies' mean is 50. Thus, the average corporate governance ratings of firms in emerging and developed economies do not differ substantially.

In addition to emerging and developed economies having roughly similar mean scores, the distribution of scores in the two types of countries also suggests that firms in emerging economies are capable of rising to world-class governance ratings in more than just a few cases. To show this, we look at the scores of two of our most well populated emerging economies in the CLSA data set: India and Hong Kong. Details of their summary statistics can be found in Appendix 1. India has 571 observations while Hong Kong has 719. These countries have roughly average country scores for emerging economies at 52.3 for India and 55 for Hong Kong. However the standard deviation in the scores for these countries is similar to the standard deviation for developed economies. Hong Kong and India's standard deviations are around 13 while developed economies (with observations greater than 7) have an average standard deviation of 15. Although there are no India observations in the CGQ data, the Hong Kong scores are similar. The mean Index CGQ is 39.6 and the standard deviation for Hong Kong, 19.2, is only slightly lower than the developed economy standard deviation average, 29. These scores show that the corporate governance scores for developed and emerging economies range

between the best and the worst. Neither set of economies has a monopoly on the corporate governance quality frontier; emerging economy firms are generally able to achieve the highest corporate governance scores in many cases.

Many industries have specific codes of conduct that specify varying levels of compliance to governance best practices. To test the importance of industry for corporate governance score we run our nested ANOVA models using two- and three-digit SIC codes as an intermediate level of analysis (results from these robustness tests can be found in Appendices 4 and 5). In the CLSA data, industry is never more important than firm effects, even when combined with the country effects. Looking at the 3-digit SIC codes, and the Adjusted-R^2, we find that industry explains 11.55% of the variance, countries explain 9.89%, and firms explain 31.59%. For the Index and Industry CGQs, we find that combining industry and country effects overpowers firm effects. However, when looking at our main question of interest, the importance of firms relative to countries in explaining emerging economy corporate governance, we see that the firm effects remain dominant.

In our analysis we use the revised anti-director rights index as a way to measure investor protection. The anti-director rights index was introduced by La Porta et al. in their paper "Law and Finance" (La Porta, Lopez, Shleiffer, and Vishny, 1998) and has since be used by many papers. In spite of revisions to the index, it has still come under criticism in recent years (Spamann, 2010). To address concerns regarding the use of this measure, we also explore the Worldwide Governance Indicators (WGI), produced by the World Bank and Daniel Kaufmann at the Brookings Institution (Kaufmann, Kraay, and Mastruzzi, 2008). The six indicators that compose the WGI are Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Each

indicator has been measured from a variety of sources for 215 economies from 1996-2011, with the exception of 2001. We use values from 2000 in place of missing 2001 data.

We explore two questions using data from the WGI. First, we look at the relative importance of firm and country for countries that rank better on the WGI indicators. Of the countries in our CLSA dataset that are covered by the WGI, Australia, the United Kingdom, and Singapore are three countries that had rankings near the top of several indicators. We compare the results for these three countries with countries that consistently ranked near the bottom of the WGI and find that there was little difference between the two groups over the importance of countries and firms in explaining governance variance. Second, we look at whether the relative importance of firms and countries in explaining governance variance changes as countries improve their corporate governance. During the last decade almost all countries improved their scores on the governance indicators. The average score for government effectiveness, for example, rose from 0.62 in 2001 to 1.24 in 2010 and control of corruption, similarly, rose from 0.43 to 0.85. Given this steady rise in governance performance on the part of countries, we explore the relative importance of country and firm in individual years over that time span. The results from these tests show no discernible pattern. Although the numbers change from year to year there is no steady increase or decrease for relative country and firm importance.

Lastly, to account for any potential carry-over methodology from the original FTSE ISS data used by Doidge, Karolyi, and Stulz (2007), we run our analysis on this new FTSE data. To get a clear, fast, and reliable picture of the FTSE data we just look at the random effects and Nested ANOVA results, both of which use all 607 emerging economy observations. In the random effects models firms explain 31% of the ratings variance while countries explain 17%. The Nested ANOVA results find that firms explain 32% of the ratings variance while countries

explain only 16%. The random effects results show that countries contribute significantly more to the variance explained than firms do; countries explain 53% of the variance while firms explain only 24%. Here we see that countries explain 66% while firms explain 18% of the variance. Therefore, our empirical approach, when applied to the FTSE data, yields results that cohere with the pattern found in the other data sets.

DISCUSSION AND CONCLUSION

Our results provide strong evidence that firm characteristics explain as much variance as country characteristics do in emerging economies. Over our three main dependent variables (CLSA cgscore, Index CGQ, and Industry CGQ) firm characteristics in emerging economies explain 33-50% of the ratings' variance while country characteristics explain only 11-28%. The difference between the variance explained by firm and country characteristics is at least, across all models, equal in importance, but in several model specifications firm characteristics explain more. These results suggest that firms had substantial capacity to rise above peer firms to achieve world class corporate governance, separate from their home country institutions over the last decade. Our results contrast with those in previous work that finds little to no role for firm characteristics in explaining governance variation in emerging economies. Our results for emerging economies also contrast with those from developed economies, where we find that country characteristics explain substantially more of the ratings variance. Firm characteristics explain 1-15% of the variance in developed economies while countries explain 38-57%.

We posit that the importance of firms differs between emerging and developed economies because of the power of highly structured regulatory systems in developed economies to crowd out the intrinsic motivation firms in emerging economies exhibit. Interest grows in the

power of institutional dynamics to crowd out self-improvement and other intrinsic motivations (Atiq, 2014). Our work provides cross-sectional evidence on how varied corporate governance regulations can crowd out the firm motivation and agency to adopt differentiated corporate governance practices. By showing that firms are successfully exhibiting their superior corporate governance in emerging economies, we also provide evidence that the mechanism behind motivational crowding out is that firms operating in systems designed to create a variety of extrinsic motivations lack the capacity to differentiate themselves from their peer firms through corporate governance. In effect, if superior governance doesn't distinguish the firm, why bother? Normatively, these results do not suggest that either intrinsic or extrinsic motivation is a superior option. Our findings are only offered as evidence that this crowding out effect may be driving the differences between emerging and developed economies.

In order to compare our results more closely to those in the Doidge, Karolyi, and Stulz (2007) paper, for one final look, we attempt to recreate their results from just the 2001 CLSA data. Because Rule of Law data was not listed for 2001, we used Rule of Law values from 2000, and where that did not exist, 2002. In general, our summary statistics for the 2001 data and the Doidge et al. paper are nearly identical, and for countries that have fewer observations the scores are actually identical. Differences between our data are likely explained by the fact that Doidge et al. have only a subset of the data we acquired for 2001; they have 376 observations while we have 494. Remaining differences may be due to winsorizing of the several variables. Using this 2001 data we first replicate their results, which are nearly identical. We then run our methodological approach of OLS that includes firm fixed effects, random effects, and Nested ANOVA. This revised approach gives results that cohere with our overall analysis: firms are

anywhere from comparable to meaningfully more important than countries variables in emerging economies.

Doidge et al. (2007) find much of the same and concluded that this result was due to lower variance among CLSA countries than in other data sets. We theorize that the difference between our conclusions and theirs could be for several reasons. First, the other data sets Doidge et al. (2007) used were dominated by developed economies, making hypotheses about emerging economies hard to test. For example, 1159 of the 1217 FTSE observations are from developed economies. We correct this by separating our datasets into emerging and developed economies and evaluating the two groups separately. Second, their models do not account for the nested nature of the data by first looking at countries and then adding in firms. We correct this by analyzing the OLS and Nested ANOVA models sequentially. Third, they only look at unobservable country characteristics by including country fixed effects and do not use firm fixed effects. We include these fixed effects to allow us to explore the importance of both unobservable country and firm characteristics. Lastly, the results we find for 2001 differed slightly from the trend we found over the entire decade that data was gathered. This suggests that 2001 could have been a unique year and those time trends were not accounted for using the cross-sectional data. We correct this approach by using panel data.

Our results are more comparable to those found in Durnev and Kim (2005), which showed that investment opportunities, need for external financing, and concentration of cash flow ownership rights were more important than country characteristics. We include measures either similar to identical to these three in our study. The importance Durnev and Kim (2005) place on firm characteristics coheres well with our findings in the current study. However, our current study is a necessary update and addition to the debate. First, we rely on different data.

Where Durnev and Kim (2005) uses cross-sectional data from CLSA and S&P in 2000, we use panel data covering several years from CLSA, CGQ, and FTSE. Second, we explore the importance of firm fixed effects and random effects. Durnev and Kim (2005) look solely at the three specific variables cited and compare them to country random effects. Finally, we employ several different regression estimation techniques, such as random effects and ANOVA to ensure that our results are not due to model specifications. Therefore, our paper provides stronger evidence that firms are playing a greater role than countries. Moreover, our contribution to the debate was necessary given the counter-argument made in Doidge, Karolyi, and Stulz (2007), who leave the discussion at the counter-intuitive conclusion that countries are more important. The results found here swing the pendulum back towards the importance of firm characteristics, and, in effect, are intended to meaningfully clarify the debate.

The importance of firm fixed effects in our results suggests that the key mechanism behind emerging economy firm governance improvement is unobservable firm characteristics. Surveys such as the one recently completed by the academics Khanna and Zyla of the International Finance Corporation allow us to conjecture as to what exactly might be contained in the firm fixed effects (Khanna and Zyla, 2012). Khanna and Zyla report that investors in emerging economies place a high value on culture, personality, and subjective measures such as the willingness of management to meet with investors and the motivations of the controlling group or management. These same types of values may be behind the ratings given to the emerging economy firms that rose above their peer country firms and weak institutional environment. Future research, both quantitative and qualitative, could work to identify better what processes are driving these emerging economy firms to improve their corporate governance and unpack those unobservable characteristics contained in the firm fixed effects.

Differences between our CLSA data and the CGQ data imply that there are unique attributes to the different institutional and financial environments in emerging and developed economies. Much attention has already been given to emerging economies; future research could explore the mechanisms driving country importance in developed economies. Future research could also work to locate and test an exogenous shock to any of the firm and country characteristics here to try to identify causality. By using panel data over 10 years, our results provide a stronger suggestion of causality, but a natural experiment and subsequent analysis of corporate governance ratings would offer superior evidence. Such a study could be undertaken at the country level, as shocks to the variables listed here across multiple countries or regions would be unlikely. Instrumental variable analysis could also shed light on this debate, as it has already been used to understand firm value reactions to corporate governance (Black, Jang, Kim, 2006).

In conclusion, the results from our multiple specifications of firm and country characteristics provide strong evidence that firm-level variables play an important role in explaining corporate governance ratings in emerging economies. Prior work by Doidge, Karolyi, and Stulz (2007) and others stated that country effects were dominant. However, by looking at panel data and allowing unobservable firm characteristics to explain variation of firms' corporate governance ratings with fixed effects, random effects, and Nested ANOVA models, we show that firm effects in emerging economies are as important, and often more important, than country effects in explaining corporate governance ratings. Moving forward, this suggests that firms in emerging economies have the capability to rise above home country institutions that may be incomplete and/or to distinguish themselves from their peer firms, improve corporate governance

ratings, and hopefully attract greater levels of capital and grow. While the country in which the firm is based is still important, there is agency beyond location for firms.

REFERENCES

Acemoglu, D., S. Johnson, and J.A. Robinson, 2001, The Colonial Origins of Comparative Development: An Empirical Investigation, American Economic Review, 9, 1369-1401.

Bae, K., and V.K. Goyal, 2010, Equity Market Liberalization and Corporate Governance, Journal of Corporate Finance, 16, 609-621.

Beck, T., R. Levine, and N. Loayza, 2000, Financial Intermediation and Growth: Causality and Causes, Journal of Monetary Economics, 46, 31-77.

Black, B.S., I. Love, and A. Rachinsky, 2006, Corporate Governance Indices and Firms' Market Values: Time Series Evidence from Russia, Emerging Markets Review, 7, 361-379.

Black, B.S., H. Jang, and W. Kim, 2006, Does Corporate Governance Predict Firm Values?, Journal of Law, Economics, and Organizations, 22, 366-413.

Black, B.S. and V.S. Khanna, 2007, Can Corporate Governance Reforms Increase Firms' Market Values: Event Study Evidence from India, Journal of Empirical Legal Studies, 4.

Bowman, E., and C. Helfat, 2001, Does Corporate Strategy Matter? Strategic Management Journal, 22, 1-23.

Chen, K.C.W., Z. Chen, and K.C.J. Wei, 2009, Legal Protection of Investors, Corporate Governance, and the Cost of Equity Capital, Journal of Corporate Finance, 15, 273-289.

Coffee, J.C. Jr., 2002, Racing Towards the Top? The Impact of Cross-Listings and the Stock Market Competition on International Corporate Governance, Columbia Law Review, 102, 1757-1831.

Crossland, C. and D. Hambrick, 2007, How National Systems Differ in their Constraints on Corporate Executives: A Study of CEO Effects in Three Countries, Strategic Management Journal, 28, 767-789.

Deci, E. and R.M. Ryan, 1985, Intrinsic Motivation and Self-Determination in Human Behavior, Plenum Press.

Doidge, C., A. Karolyi, K.V. Lins, D.P. Miller, and R.M. Stulz, 2009, Private Benefits of Control, Ownership, and the Cross-Listing Decision, Journal of Finance, 64, 425-266.

Doidge, C., A. Karolyi, and R. Stulz, 2007, Why do Countries Matter so Much for Corporate Governance?, Journal of Financial Economics, 86, 1-39.

Durnev, A., and E.H. Kim, 2005, To Steal or not to Steal: Firm Attributes: Legal Environment, and Valuation, Journal of Finance, 60, 1461-1493.

Frey, B., 2012, Crowding Out and Crowding in of Intrinsic Preferences, in Reflexive Governance for Global Public Goods, ed. Eric Brousseau, Dedeurwaerdere, Tom, and Siebenhuner, Bernd, MIT, 75-83.

Frey, B. and F. Oberholzer-Gee, 1997, The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-Out, American Economic Review, 746-755.

Gennaioli, N., A. Shleifer, and R. Vishny, 2013, A Model of Shadow Banking, Journal of Finance, 68(4), 1331-1363.

Hofmann, D.A., 1997, An Overview of the Logic and Rationale of Hierarchical Linear Models, Journal of Management, 23, 723-744.

Kaufmann, D., A. Kraay, and M. Mastruzzi, 2008, Governance Matters VII: Aggregate and Individual Governance Indicators, 1996-2007, World Bank Policy Research Working Paper No. 4654.

Khanna, V.K. and R. Zyla, 2012, Survey Says… Corporate Governance Matters to Investors in Emerging Market Companies, International Finance Corporation:

http://www.ifc.org/wps/wcm/connect/dbfd8b004afe7d69bcb6bdb94e6f4d75/IFC_EMI_Survey_web.pdf?MOD=AJPERES
Klapper, L.F., and I. Love, 2004, Corporate Governance, Investor Protection, and Performance in Emerging Markets, Journal of Corporate Finance, 10, 703-728.
Klapper, L.F., L. Laeven, and I. Love, 2006, What Drives Corporate Governance? Firm –level Evidence from Eastern Euorpe, World Bank Policy Research Working Paper Series, 3600.
Krishnamurti, C., A. Sevic, and Z. Sevic, 2006, Legal Environment, Firm-Level Corporate Governance, and Expropriation of Minority Shareholders in Asia, Economic Change and Restructuring, 38, 85-111.
La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny, 1998, Law and Finance, Journal of Political Economy, 106, 1113-1155.
Lieberson, S., and J.F. O'Connor, 1972, Leadership and Organizational Performance: A Study of Large Corporations, American Sociological Review, 37, 117-130.
Lim, A. and K. Tsutsui, 2012, Globalization and Commitment in Corporate Social Responsibility: Cross-National Analyses of Institutional and Political-Economy Effects, American Sociological Review, 77, 69-98.
McGahan, A.M., and M.E. Porter, 1997, How Much Does Industry Matter, Really?, Strategic Management Journal, 7, 141-160.
McNamara, G., D. Deephouse and R. Luce, 2003, Competitive Positioning Within and Across a Strategic Group Structure: The Performance of Core, Secondary, and Solitary Firms, Strategic Management Journal, 24, 161-181.
Reese, W.A. Jr., and M.S. Weisbach, 2002, Protection of Minority Shareholder Interests, Cross-Listing in the United States, and Subsequent Equity Offerings, Journal of Financial Economics, 66, 65-104.
Rumelt, R., 1991, How Much Does Industry Matter?, Strategic Management Journal, 12, 167-185.
Sawicki, J., 2009, Corporate Governance and Dividend Policy in Southeast Asia Pre- and Post-Crisis, European Journal of Finance, 15, 211-230.
Shleifer, A., and R.W. Vishny, 1997, A Survey of Corporate Governance, Journal of Finance, 52, 737-783.
Short, J.C., D.J. Ketchen Jr., T.B. Palmer, and G.T.M. Hult, 2007, Firm, Strategic Group, and Industry Influences on Performance, Strategic Management Journal, 28, 147-167.
Siegel, J.I., 2005, Can Foreign Firms Bond Themselves Effectively by Renting US Securities Laws?, Journal of Financial Economics, 75, 319-359.
Spamann, H., 2010, The Antidirector Rights Index Revisited, Review of Financial Studies, 23 (2), 467-486.
Wasserman, N., B. Anand, and N. Nohria. "When Does Leadership Matter? The Contingent Opportunities View of CEO Leadership." Harvard Business School Working Paper, No. 01–063, January 2001. ((Later published as Ch. 2 in The Handbook of Leadership Theory and Practice, 2010.))

Table I

The following table gives the summary statistics for the Credit Lyonnais Securities Asia (CLSA) data and its companies. This data set encompasses 10 years of CLSA tracking corporate governance performance of firms in emerging economies. Only data used in our models is included in the summary statistics below. The first variable is the CLSA given *corporate governance score.* The next five are the firm variables included in previous studies: *sales growth, financial dependence* (EBITDA based), *closely held shares* (as a percent of total shares), *log(assets),* and *cash-to-assets ratio* . The next three variable variables are the three observable country characteristics used in our analysis. *Antidirector x Legal* captures the interactions of the *Revised Antidirector Rights Index* and the *Rule of Law* in that country. The remaining variables described below are additional observable firm characteristics used to capture the complex interaction between firms and corporate governance in emerging economies. The following variables below have been winsorized at the 1st/99th percentiles to remove outliers: *Corporate Governance Score, 2yr Sales Growth, Financial Dependence, Closely Held Shares, Cash/Total Assets, Antidirector x Legal, GDP per capita, Fixed Assets/Total Assets, Current Ratio, Leverage, Tobin's Q, Foreign Sales, 1yr Foreign Sales Growth, PE Ratio, Price to Book Ratio, Quick Ratio, Return on Assets, Capital Expenditure, Cash/Dividends, 3yr Dividends Growth, 5yr Income Growth, 5yr Sales Growth, Short-Term Debt, 5yr Assets Growth,* and *Total Debt* (%). The remaining variables described below are additional observable firm characteristics used to capture the complex interaction between firms and corporate governance in emerging economies.

Panel A: CLSA Variable Descriptions

Variable	Median	Mean	St Dev.	Min	Max	Observations
Corporate Governance Score	55.10	54.03	14.78	5.38	83.92	3,973
2yr Sales Growth	15.13	21.97	39.88	-46.02	224.62	3,684
Financial Dependence	-1.19	-2.11	3.04	-20.20	2.34	2,512
Closely Held Shares	52.71	50.32	23.74	0.67	97.52	3,359
Log (Assets)	14.66	14.74	1.79	9.16	21.63	3,703
Cash/Total Assets	0.12	0.17	0.15	0.00	0.75	3,168
Antidirector x Legal	2.47	3.03	3.40	-2.97	8.39	3,336
GDP per capita	4459	12822	13544	469	40238	3,345
Stock Market Cap/GDP	90.01	164.08	178.68	6.84	617.05	3,345
Fixed Assets/Total Assets	0.32	0.34	0.25	0.00	0.89	3,697
SEC Compliance	0.00	0.10	0.30	0.00	1.00	3,825
Current Ratio	1.48	2.00	1.67	0.25	10.45	3,090
Leverage	0.50	0.51	0.24	0.01	0.96	3,605
Tobin's Q	0.98	1.46	1.56	0.07	9.22	3,550
Foreign Sales	0.00	16.51	29.26	0.00	100.00	3,973
Foreign Sales Growth	0.00	3.05	26.52	-74.86	177.97	3,973
PE Ratio	13.51	17.93	26.92	-37.02	210.57	3,674
Price-to-Book Ratio	1.80	2.72	2.99	0.22	19.13	3,693
Quick Ratio	1.01	1.48	1.48	0.15	9.35	3,134
Return on Assets	7.24	8.60	8.54	-16.93	38.40	3,696
R&D Intensity (expenditure as a % of sales)	0.00	0.13	1.08	0.00	42.69	3,825
Capital Expenditure	5.59	8.27	9.20	0.02	54.64	3,642
Cash Dividend Coverage Ratio	4.28	8.67	16.76	-4.55	132.04	2,762
3yr Dividend Growth	10.06	10.06	40.34	-100.00	131.31	3,056
5yr Income Growth	16.56	21.98	29.29	-37.09	140.17	2,695
5yr Sales Growth	16.76	21.73	23.38	-14.48	141.87	3,147
Short-Term Debt	119	1000	3088	0.00	22892	3,744
5yr Assets Growth	14.89	20.20	22.06	-12.77	117.55	3,123
Total Debt (%)	48.05	81.70	107.70	0.00	641	3,808

Panel B: CLSA Variable Correlations

The following table displays the correlations among the variables in the CLSA data set. This data set encompasses 10 years of corporate governance scores for firms in emerging economies. Correlation are marked with an * for 5%, ** for 1%, and *** for 0.1% significance.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	Corporate Governance Score	1																												
2	Sales Growth	-0.06***	1																											
3	Financial Dependence	-0.04*	-0.01	1																										
4	Closely Held Shares	-0.13***	0.01	0.10***	1																									
5	Log(Assets)	0.03	-0.06***	0.09***	-0.07***	1																								
6	Cash/Total Assets	0.04**	0.09***	-0.17***	-0.03	-0.29***	1																							
7	Antidirector x Legal	0.17***	0.05***	0.04*	-0.07***	0.04**	0.12***	1																						
8	GDP per capita	0.13***	0.06***	0.05**	-0.07***	0.08***	0.18***	0.93***	1																					
9	Stock Market Cap / GDP	0.03*	0.10***	0.05**	0.08***	-0.03*	0.17***	0.69***	0.73***	1																				
10	Fixed Assets/Total Assets	-0.08***	-0.04**	0.31***	0.14***	-0.06***	-0.39***	-0.04**	-0.06***	-0.08***	1																			
11	SEC Compliance	0.09***	0.02	0.13***	-0.01	0.17***	0.05***	-0.04**	-0.01	-0.09***	0.15***	1																		
12	Current Ratio	0.03	0.04*	-0.15***	-0.02	-0.30***	0.52***	0.08***	0.11***	0.13***	-0.34***	-0.02	1																	
13	Leverage	-0.02	-0.02	-0.05**	-0.03*	0.44***	-0.25***	-0.16***	-0.18***	-0.19***	-0.22***	-0.03	-0.52***	1																
14	Tobins Q	0.09***	0.16***	-0.08***	0.03*	-0.34***	0.26***	0.01	-0.01	0.02	0.01	0.02	0.12***	-0.23***	1															
15	Foreign Sales	0.06***	0.04***	0.03	-0.04**	0.00	0.04*	0.31***	0.33***	0.26***	-0.03*	0.01	0.04**	-0.13***	0.04**	1														
16	2yr Foreign Sales Growth	0.02	0.05***	0.02	-0.01	0.05***	-0.02	0.06***	0.06***	0.06***	-0.01	0.02	-0.04**	0.03*	-0.02	0.17***	1													
17	PE Ratio	-0.01	0.05***	-0.02	0.00	-0.03*	0.03*	-0.02	-0.02	0.03*	-0.02	0.01	0.00	0.01	0.18***	-0.01	0.04***	1												
18	Price-to-book Ratio	0.09***	0.18***	-0.09***	0.08***	-0.22***	0.18***	-0.01	-0.04**	0.04**	-0.11***	-0.02	-0.03	0.04***	0.73***	0.00	-0.01	0.22***	1											
19	Quick Ratio	0.05***	0.04*	-0.08***	-0.03	-0.28***	0.63***	0.11***	0.14***	0.16***	-0.28***	0.03	0.91***	-0.53***	0.15***	0.05***	-0.03*	0.01	0.00	1										
20	Return on Assets	0.09***	0.20***	-0.03	0.09***	-0.33***	0.26***	-0.03	-0.03*	0.03	0.02	0.00	0.22***	-0.37***	0.57***	0.05***	-0.01	0.01	0.47***	0.23***	1									
21	R&D Intensity (as a % of sales)	0.02	0.01	-0.03	-0.04	-0.06***	0.11***	-0.01	-0.01	-0.05***	-0.04	0.06***	0.13***	-0.07***	0.06***	0.05***	0.00	-0.02	0.02	0.15***	0.03	1								
22	CapitalExpenditure	-0.04***	0.26***	0.17***	0.02	-0.12***	-0.10***	-0.02	-0.02	0.00	0.44***	0.11***	-0.15***	-0.09***	0.17***	0.06***	0.02	0.09***	0.13***	-0.11***	0.19***	0.02	1							
23	Cash Dividend Coverage Ratio	-0.06***	0.12***	0.07***	-0.05***	0.12***	-0.08***	-0.07***	-0.08***	-0.14***	0.01	0.07***	-0.05***	0.17***	0.02	-0.01	-0.02	0.04**	0.04*	-0.05***	-0.04**	0.03	0.12***	1						
24	3yr Dividend Growth	0.14***	0.17***	-0.03	-0.02	-0.01	0.12***	0.02	0.02	-0.01	-0.05***	0.01	0.07***	-0.09***	0.20***	0.03*	-0.01	-0.01	0.19***	0.07***	0.39***	0.03	0.08***	0.00	1					
25	5yr Income Growth	-0.07***	0.32***	0.01	0.04*	-0.03	0.12***	-0.08***	-0.06***	-0.02	-0.08***	0.07***	-0.01	0.05**	0.16***	0.04**	0.02	-0.05**	0.21***	-0.01	0.28***	-0.02	0.21***	0.15***	0.30***	1				
26	5yr Sales Growth	-0.09***	0.39***	0.04*	0.08***	-0.07***	0.10***	-0.02	-0.01	0.05***	-0.05**	0.10***	0.01	0.02	0.13***	0.07***	0.06***	0.05***	0.15***	0.01	0.16***	-0.01	0.28***	0.09***	0.07***	0.64***	1			
27	Short-Term Debt	0.05***	-0.03*	0.06***	-0.09***	0.58***	-0.15***	0.04**	0.07***	-0.06***	-0.16***	0.11***	-0.18***	0.30***	-0.13***	0.00	0.00	0.01	-0.09***	-0.17***	-0.19***	-0.01	-0.10***	0.14***	0.00	-0.04*	-0.06***	1		
28	5yr Assets Growth	-0.08***	0.33***	0.02	0.04*	-0.06***	0.12***	0.01	0.00	0.08***	-0.12***	0.07***	0.07***	0.07***	0.10***	0.08***	0.06***	0.05***	0.13***	0.09***	0.10***	0.04	0.31***	0.11***	0.04**	0.56***	0.82***	-0.06***	1	
29	Total Debt (%)	-0.03*	-0.01	0.07***	-0.07***	0.35***	-0.25***	-0.08***	-0.11***	-0.15***	-0.05***	0.05***	-0.29***	0.58***	-0.20***	-0.07***	-0.01	-0.03*	-0.04**	-0.28***	-0.31***	-0.04***	-0.04**	0.19***	-0.14***	-0.02	0.02	0.38***	0.07***	1

Panel C: CGQ Variable Descriptions

This table displays the summary statistics for the variables in the Corporate Governance Quotient (CGQ) data. RiskMetrics Group tracked corporate governance behavior of firms around the world from 2003-2009. They published their firm ratings, the CGQ, under the Governance Risk Indicators (GRId). It is for this reason that the mean GDP per capita differs so dramatically from the mean GDP per capita in Table 1, Panel A where emerging economies create a lower overall average statistic. Only data used in our models is included in the summary statistics below. The first two variables reported below are the two corporate governance scores awarded to firms. The next five are the firm variables included in previous studies: *sales growth, financial dependence* (EBITDA based), *closely held shares* (as a percent of total shares), *log(assets)* , and *cash-to-assets ratio* . The next three variable variables are the three observable country characteristics used in our analysis. *Antidirector x Legal* captures the interactions of the *Revised Antidirector Rights Index* and the *Rule of Law* in that country. The remaining variables described below are additional observable firm characteristics used to capture the complex interaction between firms and corporate governance in emerging economies. The following variables below have been winsorized at the 1st/99th percentiles to remove outliers: *Index* and *Industry Corporate Governance Quotients, 2yr Sales Growth, Financial Dependence, Closely Held Shares, Cash/Total Assets, Antidirector x Legal, GDP per capita, Fixed Assets/Total Assets, Current Ratio, Leverage, Tobin's Q, Foreign Sales, 1yr Foreign Sales Growth, PE Ratio, Price to Book Ratio, Quick Ratio, Return on Assets, Capital Expenditure, Cash/Dividends, 3yr Dividends Growth, 5yr Income Growth, 5yr Sales Growth, Short-Term Debt, 5yr Assets Growth,* and *Total Debt (%)* . The extreme values of *R&D Intensity* (measured as R&D expenditure as a % of sales) come from 10 or so start-up companies in the pharmaceutical industry, with only one firm going to 1000%, listed here as the max.

Variable	Median	Mean	St. Dev.	Min	Max	Observations
Index Corporate Governance Quotient	50.20	50.21	28.77	1.00	99.10	15,390
Industry Corporate Governance Quotient	50.70	50.73	28.76	1.50	100.00	15,390
2yr Sales Growth	9.83	11.36	26.03	-53.67	129.48	14,261
Financial Dependence	-1.87	-3.59	5.49	-36.12	3.65	10,013
Closely Held Shares	29.00	32.70	23.37	0.03	89.90	13,602
Log (Assets)	8.07	8.23	1.86	1.28	15.14	14,399
Cash/Total Assets	0.09	0.13	0.13	0.00	0.66	12,992
Antidirector x Legal	6.09	6.22	1.76	0.63	8.53	15,262
GDP per Capita	28,368	29,788	7,492	11,547	40,707	15,134
Stock Market Cap/GDP	103.24	114.75	87.12	13.15	617.05	15,093
Fixed Assets/Total Assets	0.25	0.30	0.24	0.00	0.99	14,280
SEC Compliance	0.00	0.12	0.33	0.00	1.00	15,267
Current Ratio	1.37	1.72	1.24	0.32	7.82	12,088
Leverage	0.57	0.57	0.24	0.01	1.19	13,695
Tobin's Q	0.84	1.12	1.05	0.06	6.84	13,336
Foreign Sales	38.86	41.86	31.98	0.00	100	11,451
Foreign Sales Growth	5.42	13.98	45.73	-72.10	307	11,004
PE Ratio	15.32	17.57	32.06	-88.11	208	14,037
Price-to-Book Ratio	1.68	2.34	2.42	-2.10	15.87	14,079
Quick Ratio	0.94	1.24	1.10	0.15	7.12	12,095
Return on Assets	4.43	4.82	8.10	-30.11	31.49	14,296
R&D Intensity (expenditure as a % of sales)	0.00	0.93	13.21	0.00	1,061	11,699
Capital Expenditure	3.80	5.20	5.42	0.02	31.18	13,718
Cash Dividend Coverage Ratio	4.88	7.97	11.20	-5.60	82.43	10,954
3yr Dividend Growth	5.76	4.47	31.32	-100.00	88.21	13,204
5yr Income Growth	8.71	11.53	21.98	-36.90	102.04	11,499
5yr Sales Growth	6.17	8.54	14.28	-25.33	72.52	13,804
Short-Term Debt	126	3,160	15,233	0.00	129,656	14,261
5yr Assets Growth	6.05	8.91	14.78	-21.74	75.19	13,772
Total Debt (%)	53	125	252	-234	1,685	14,362

Panel D: CGQ Variable Correlations

The following table displays the correlations among the variables in the CGQ data set from Risk Metrics. This data set encompasses 7 years of corporate governance scores for firms. Correlation are marked with an * for 5%, ** for 1%, and *** for 0.1% significance.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	Index CGQ	1																													
2	Industry CGQ	0.93***	1																												
3	2yr Sales Growth	0.00	0.02**	1																											
4	Financial Dependence	-0.03***	-0.02**	-0.06***	1																										
5	Closely Held Shares	-0.28***	-0.31***	0.01	0.03***	1																									
6	Log (Assets)	-0.05***	-0.03***	0.01	-0.06***	-0.12***	1																								
7	Cash/Total Assets	-0.01	-0.02**	0.02***	-0.12***	0.06***	-0.27***	1																							
8	Antidirector x Legal	0.39***	0.40***	0.02**	-0.03***	-0.18***	-0.21***	0.03***	1																						
9	GDP per capita	-0.24***	-0.26***	-0.05***	-0.01	-0.07***	0.02***	0.11***	0.24***	1																					
10	Stock Market Cap/GDP	0.10***	0.10***	0.09***	-0.04***	0.12***	-0.06***	0.07***	0.36***	0.11***	1																				
11	Fixed Assets/Total Assets	-0.01	-0.01	0.01	0.35***	0.03***	-0.07***	-0.37***	0.04***	-0.03***	0.01*	1																			
12	SEC Compliance	0.12***	0.18***	0.04***	0.04***	-0.18***	0.21***	0.02*	0.04***	-0.12***	0.02**	0.07***	1																		
13	Current Ratio	-0.06***	-0.03***	0.02*	-0.05***	0.04***	-0.28***	0.56***	0.05***	0.09***	0.09***	-0.23***	0.03***	1																	
14	Leverage	0.06***	0.06***	-0.05***	-0.14***	-0.13***	0.42***	-0.28***	-0.10***	-0.09***	-0.15***	-0.15***	0.00	-0.56***	1																
15	Tobin's Q	0.10***	0.09***	0.13***	0.06***	0.02*	-0.31***	0.28***	0.11***	-0.05***	0.09***	0.01	0.06***	0.18***	-0.17***	1															
16	Foreign Sales	0.15***	0.17***	0.01	0.03**	-0.06***	-0.01	0.07***	0.07***	-0.13***	0.09***	-0.09***	0.20***	0.09***	-0.08***	0.10***	1														
17	1yr Foreign Sales Growth	0.03***	0.04***	0.41***	-0.03***	0.03***	0.01	-0.02**	0.05***	-0.03***	0.08***	-0.02**	0.00	-0.01	-0.01	0.06***	0.10***	1													
18	PE Ratio	-0.05***	-0.06***	0.04***	0.00	0.03***	0.01	0.00	-0.03***	0.07***	-0.01	-0.01	0.00	0.00	-0.03***	0.06***	-0.03***	0.01	1												
19	Price-to-Book Ratio	0.12***	0.10***	0.13***	-0.04***	-0.01	-0.13***	0.17***	0.06***	-0.12***	0.06***	-0.08***	0.07***	-0.04***	0.07***	0.58***	0.04***	0.05***	0.06***	1											
20	Quick Ratio	-0.06***	-0.04***	0.04***	-0.03***	0.06***	-0.28***	0.65***	0.03***	0.08***	0.09***	-0.20***	0.04***	0.94***	-0.53***	0.21***	0.08***	0.00	0.00	0.00	1										
21	Return on Assets	0.07***	0.05***	0.18***	0.01	0.06***	-0.03***	0.02**	0.05***	-0.08***	0.13***	0.05***	0.01	0.02**	-0.19***	0.38***	0.06***	0.10***	0.09***	0.30***	0.02*	1									
22	R&D Intensity (as a % of sales)	0.02**	0.03***	0.00	0.04***	-0.07***	-0.18***	0.35***	0.02**	0.09***	-0.06***	-0.15***	0.12***	0.31***	-0.20***	0.22***	0.16***	-0.02*	0.00	0.08***	0.32***	-0.13***	1								
23	Capital Expenditure	0.03***	0.04***	0.14***	0.26***	0.01	-0.07***	-0.15***	0.03***	-0.08***	0.00	0.53***	0.10***	-0.10***	-0.10***	0.15***	0.05***	0.09***	-0.01	0.09***	-0.07***	0.19***	-0.08***	1							
24	Cash Dividend Coverage Ratio	-0.14***	-0.12***	0.08***	0.08***	0.01	0.16***	-0.04***	-0.13***	0.13***	-0.08***	0.08***	0.06***	-0.06***	0.12***	-0.08***	-0.01	0.02	0.04***	-0.05***	-0.04***	-0.06***	0.01	0.14***	1						
25	3yr Dividend Growth	-0.06***	-0.06***	0.19***	-0.06***	-0.02**	0.07***	0.06***	0.05***	0.12***	0.09***	-0.03***	0.02**	0.06***	-0.13***	0.14***	-0.03***	0.11***	0.05***	0.14***	0.07***	0.31***	0.01	0.08***	-0.05***	1					
26	5yr Income Growth	0.03***	0.03***	0.31***	-0.08***	-0.01	0.06***	0.03***	0.01	-0.05***	0.03***	-0.05***	0.02**	-0.02**	0.01	0.13***	0.06***	0.16***	-0.06***	0.15***	0.00	0.28***	-0.04***	0.14***	0.08***	0.32***	1				
27	5yr Sales Growth	0.06***	0.07***	0.39***	-0.04***	0.02***	-0.01	0.05***	0.07***	-0.13***	0.11***	0.04***	0.05***	0.02**	-0.08***	0.13***	0.04***	0.20***	-0.01*	0.11***	0.04***	0.13***	0.01	0.22***	0.04***	0.16***	0.54***	1			
28	Short-Term Debt	0.04***	0.06***	0.01	-0.13***	-0.09***	0.48***	-0.06***	-0.07***	-0.06***	-0.05***	-0.18***	0.14***	-0.14***	0.25***	-0.13***	-0.08***	0.00	-0.03***	-0.05***	-0.12***	-0.08***	-0.06***	-0.13***	0.08***	-0.02***	0.00	0.01	1		
29	5yr Assets Growth	0.10***	0.12***	0.30***	-0.06***	-0.01	0.04***	0.02*	0.08***	-0.18***	0.07***	0.01	0.04***	0.07***	-0.07***	0.08***	0.05***	0.18***	-0.02**	0.07***	0.09***	0.12***	-0.04***	0.24***	0.00	0.13***	0.45***	0.76***	0.04***	1	
30	Total Debt (%)	0.00	0.02**	0.00	-0.07***	-0.04***	0.39***	-0.15***	-0.10***	-0.09***	-0.08***	-0.08***	0.04***	-0.23***	0.42***	-0.15***	-0.13***	-0.01	-0.03***	0.23***	-0.21***	-0.12***	-0.12***	-0.10***	0.18***	-0.10***	-0.01	0.00	0.56***	0.02*	1

Table II

The tables below show the coefficient estimates from the CLSA corporate governance ratings for emerging economies only. In Panel A there are the OLS and random effects models; in Panel B there are the Nested ANOVA results. The regressions below explore the relative importance of countries and firms in explaining corporate governance ratings of firms in emerging economies. The OLS models include different combinations of observable and unobservable firm and country characteristics. These models are run sequentially, with the previous Adjusted-R^2 being substracted to give us the pure contribution of the additional variables added in each model. Thus in Models 1-9, we add, respectively: year effects, observable country characteristics, observable limited set of firm characteristics, observable full set of firm characteristics, country FE, country FE and observable characteristics, firm and country FE, firm and country FE plus observable country characteristics and limited observable firm characteristics, and finally, firm and country FE plus observable country characteristics and all observable firm characteristics. The random effects model, Model 10, is provided as a one step way to analyze the contributions of firms and countries. The ANOVA models in Panel B similarly capture unobservable firm characteristics and are analyzed sequentially. The results in both Panels A and B below show that firm characteristics, and especially firm fixed effects, explain more corporate governance ratings variation than country characteristics. For observed characteristics, an inclusive set of firm characteristics in Model 4 explains 8% of the variance while countries explain 5%. Firm fixed effects plus observable variables explain 42% while country fixed effects plus observable variables explain only 15%. In the random effects model, Model 10, the amount of variance explained is calculated from the random effects listed below, showing that firms explain 37.33% of variance and countries explain 26.80%. Correlations are marked with an * for 5% significance, ** for 1% significance, and *** for 0.1% significance.

Panel A: OLS and Random Effects Results in CLSA Emerging Economies Only

Independent Variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		2.07***	1.77***	1.32**		-0.31		0.54	4.91**	
		(0.38)	(0.47)	(0.61)		(0.70)		(1.65)	(2.23)	
GDP per capita		-0.00***	-0.00*	0.00		0.00		0.00	0.00	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		0.00	-0.01*	0.00		0.01**		0.00	-0.01	
		(0.00)	(0.00)	(0.01)		(0.00)		(0.01)	(0.01)	
Sales Growth			-0.03**	-0.02				-0.01	0.00	
			(0.01)	(0.02)				(0.01)	(0.02)	
Financial Dependence			-0.03	0.32				-0.15	-0.04	
			(0.19)	(0.24)				(0.23)	(0.28)	
Closely Held Shares			-0.05**	-0.05				-0.02	0.00	
			(0.03)	(0.03)				(0.03)	(0.05)	
log(Assets)			-0.48	-0.72				0.72	-0.24	
			(0.37)	(0.57)				(1.48)	(3.06)	
Cash/Total Assets			2.15	-11.13*				1.76	1.37	
			(3.97)	(6.39)				(7.61)	(10.16)	
Expanded Firm Variables				yes					yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	3,636	2,744	1,445	779	3,636	2,744	3,636	1,445	779	3,636
R^2	0.08	0.13	0.13	0.24	0.21	0.23	0.73	0.75	0.80	
Adjusted-R^2	0.08	0.13	0.12	0.20	0.21	0.22	0.61	0.61	0.64	
Additional Adjusted-R^2		0.05	-0.01	0.08	0.13	0.15	0.40	0.39	0.42	
Country Random Effect										7.87
										(1.54)
Firm Random Effect										9.28
										(0.27)
Residual										9.1
										(0.13)

Panel B: Nested ANOVA Results for CLSA Emerging Economies Only

Source of Variation	**Additional R^2**	**Additional Adjusted-R^2**
Year	7.70%	7.48%
Country	12.16	11.65
Firm	53.33	41.44

Table III

These tables show the regression results on the corporate governance quotients from emerging economies data only. Panels A and B use both OLS and random effects regression to look at the *Index CGQ* and the *Industry CGQ* , respectively. Panels C and D use Nested ANOVA to look at both outcome variables. The regressions below explore the relative importance of countries and firms in explaining corporate governance ratings of firms in emerging economies. The OLS models include different combinations of observable and unobservable firm and country characteristics. These models are run sequentially, with the previous Adjusted-R^2 being substracted to give us the pure contribution of the additional variables added in each model. Thus in Models 1-9, we add, respectively: year effects, observable country characteristics, observable limited set of firm characteristics, observable full set of firm characteristics, country FE, country FE and observable characteristics, firm and country FE, firm and country FE plus observable country characteristics and limited observable firm characteristics, and finally, firm and country FE plus observable country characteristics and all observable firm characteristics. The random effects model, Model 10, is provided as a one step way to analyze the contributions of firms and countries. The Nested ANOVA models in Panels C and D similarly capture unobservable firm characteristics and are analyzed sequentially. The results in all panels below show that firm characteristics, and especially firm fixed effects, explain more corporate governance ratings variation than country characteristics. For observed characteristics, an inclusive set of firm characteristics in Model 4 explains 10-13% of the variance while countries explain 8-10%. For unobserved characteristics, firm fixed effects plus observable variables explain 34-38% while country fixed effects plus observable variables explain only 15-19%. In the random effects model, Model 10, the amount of variance explained is calculated from the random effects listed below, showing that firms explain 37.84-50.40% of variance and countries explain 10.98-28.33%. Correlations are marked with an * for 5% significance, ** for 1% significance, and *** for 0.1% significance.

Panel A: OLS and Random Effects Results for Emerging Economies Only - Index CGQ

Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		-0.14	0.03	9.6***		-3.57***		5.37	10.28	
		(0.65)	(1.10)	(3.22)		(1.05)		(3.97)	(8.04)	
GDP per capita		0.00***	0.00*	-0.00**		0.00**		0.00	0.00	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		-0.04***	-0.04***	-0.02		0.03**		0.03**	0.03	
		(0.01)	(0.01)	(0.02)		(0.01)		(0.01)	(0.02)	
Sales Growth			0.02	0.05				0.01	0.01	
			(0.02)	(0.05)				(0.02)	(0.08)	
Financial Dependence			0.10	0.61				-0.15	3.06	
			(0.20)	(0.80)				(0.25)	(2.49)	
Closely Held Shares			-0.03	0.07				0.05	0.25	
			(0.07)	(0.07)				(0.06)	(0.16)	
Log (Assets)			0.19	0.74				-4.22*	2.91	
			(0.99)	(1.45)				(2.42)	(10.39)	
Cash/Assets			3.13	25.37				-18.81**	-30.92	
			(9.67)	(16.30)				(9.38)	(31.39)	
Expanded Firm Variables				yes					yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	1,413	1,292	748	222	1,413	1,292	1,413	748	222	1,413
R^2	0.17	0.27	0.25	0.47	0.34	0.37	0.75	0.80	0.84	
Adjusted-*R^2*	0.17	0.27	0.23	0.37	0.33	0.36	0.68	0.73	0.70	
Additional Adjusted-*R^2*		0.10	-0.04	0.10	0.16	0.19	0.35	0.37	0.34	
Country Random Effect										11.56
										(4.08)
Firm Random Effect										13.36
										(0.68)
Residual										12.63
										(0.27)

Panel B: OLS and Random Effects Results for Emerging Economies Only - Industry CGQ										
Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		0.24	0.38	1.35		-3.70***		5.69	11.28	
		(0.72)	(1.17)	(1.76)		(1.22)		(3.80)	(8.52)	
GDP per capita		0.00***	0.00	0.00*		0.00***		0.00	0.00	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		-0.04***	-0.03***	-0.07**		0.02		0.02	0.03	
		(0.01)	(0.01)	(0.01)		(0.01)		(0.01)	(0.02)	
Sales Growth			0.03	-0.01				0.01	0.02	
			(0.02)	(0.06)				(0.02)	(0.08)	
Financial Dependence			0.12	0.20				-0.18	2.84	
			(0.18)	(1.01)				(0.29)	(3.05)	
Closely Held Shares			-0.07	-0.05				0.01	0.20	
			(0.07)	(0.08)				(0.06)	(0.19)	
Log (Assets)			0.53	1.16				-4.18*	4.31	
			(1.05)	(1.54)				(2.50)	(10.96)	
Cash/Assets			10.13	26.48				-17.49*	-34.77	
			(10.09)	(19.03)				(10.37)	(33.75)	
Expanded Firm Variables									yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	1,413	1,292	748	222	1,413	1,292	1,413	748	222	1,413
R²	0.14	0.22	0.21	0.44	0.27	0.31	0.74	0.79	0.83	
Adjusted-*R²*	0.14	0.22	0.20	0.34	0.26	0.29	0.66	0.72	0.68	
Additional Adjusted-*R²*		0.08	-0.02	0.13	0.12	0.15	0.41	0.42	0.38	
Country Random Effect										6.98
										(2.73)
Firm Random Effect										14.94
										(0.74)
Residual										13.10
										(0.28)

Panel C: Nested ANOVA Results for Emerging Economies Only - Index CGQ		
Source of Variation	**Additional *R ²***	**Additional Adjusted-*R ²***
Year	17.06%	16.71%
Country	16.71	16.15
Firm	40.99	34.62

Panel D: Nested ANOVA Results for Emerging Economies Only - Industry CGQ		
Source of Variation	**Additional Ordinary R²**	**Additional adjusted R²**
Year	14.50%	14.13%
Country	12.17	11.54
Firm	47.09	40.52

Table IV

These tables show the regression results on the corporate governance quotients (CGQ) from developed economies data only. Developed economies are defined as those with OECD membership by 1990. Panels A and B use both OLS and random effects regression to look at the *Index CGQ* and the *Industry CGQ* , respectively. Panels C and D use Nested ANOVA to look at both outcome variables. The regressions below explore the relative importance of countries and firms in explaining corporate governance ratings of firms in emerging economies. The OLS models include different combinations of observable and unobservable firm and country characteristics. These models are run sequentially, with the previous Adjusted-R^2 being substracted to give us the pure contribution of the additional variables added in each model. Thus in Models 1-9, we add, respectively: year effects, observable country characteristics, observable limited set of firm characteristics, observable full set of firm characteristics, country FE, country FE and observable characteristics, firm and country FE, firm and country FE plus observable country characteristics and limited observable firm characteristics, and finally, firm and country FE plus observable country characteristics and all observable firm characteristics. The random effects model, Model 10, is provided as a one step way to analyze the contributions of firms and countries. The Nested ANOVA models in Panels C and D similarly capture unobservable firm characteristics and are analyzed sequentially. The results in all panels below show that country characteristics explain more corporate governance ratings variation than firm characteristics. For observed characteristics, countries explain 38-42% of the variance while an inclusive set of firm characteristics in Model 4 explains only 1-5%. For unobserved characteristics, country fixed effects plus observable variables explain 56-57% while firm fixed effects plus observable variables explain 11-13%. In the random effects model, Model 10, the amount of variance explained is calculated from the random effects listed below, showing that firms explain 18.66-19.07% of variance and countries explain 45.96-48.12%. Correlations are marked with an * for 5% significance, ** for 1% significance, and *** for 0.1% significance.

Panel A: OLS and Random Effects Results for GRI Developed Economies Only - Index CGQ

Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		7.20***	6.36***	4.81***		-1.58*		-10.98**	-9.53***	
		(0.29)	(0.43)	(0.63)		(0.84)		(1.50)	(3.10)	
GDP per capita		-0.00***	-0.00***	-0.00***		0.00		-0.00***	-0.01**	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	0.00	
Stock Market Cap/GDP		0.17***	0.16***	0.18***		-0.01		0.02	-0.04	
		(0.01)	(0.01)	(0.02)		(0.02)		(0.02)	(0.04)	
Sales Growth			-0.02*	(0.01)				0.00	-0.01	
			(0.01)	(0.03)				(0.01)	(0.03)	
Financial Dependence			-0.03	0.06				-0.01	0.08	
			(0.09)	(0.14)				(0.11)	(0.23)	
Closely Held Shares			-0.21***	-0.20***				-0.03	-0.06	
			(0.02)	(0.03)				(0.03)	(0.08)	
log(Assets)			0.62**	(0.70)				2.37**	5.52*	
			(0.30)	(0.56)				(1.05)	(3.22)	
Cash/Total Assets			12.80***	12.70*				-5.24	-11.94	
			(3.00)	(7.25)				(4.41)	(13.97)	
Expanded Firm Variables				yes					yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	13,977	13,779	7,473	2,762	13,977	13,779	13,977	7,473	2,762	13,977
R^2	0.00	0.38	0.42	0.44	0.56	0.56	0.77	0.78	0.79	
Adjusted-R^2	0.00	0.38	0.42	0.43	0.56	0.56	0.71	0.72	0.69	
Additional Adjusted-R^2		0.38	0.04	0.05	0.56	0.56	0.15	0.16	0.13	
Country Random Effect										18.10
										(2.77)
Firm Random Effect										11.66
										(0.23)
Residual										15.79
										(0.11)

Panel B: OLS and Random Effects Results for GRI Developed Economies Only - Industry CGQ										
Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		7.34***	6.56***	6.02***		-1.41*		-10.02***	-9.90***	
		(0.28)	(0.43)	(0.56)		(0.81)		(1.48)	(2.51)	
GDP per capita		-0.00***	-0.00***	-0.00***		0.00		-0.00***	-0.00**	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		0.19***	0.17***	0.17***		-0.02		0.00	0.01	
		(0.01)	(0.01)	(0.02)		(0.02)		(0.02)	(0.03)	
Sales Growth			-0.01	-0.04*				0.00	-0.04	
			(0.01)	(0.02)				(0.01)	(0.02)	
Financial Dependence			0.00	0.16				-0.04	0.08	
			(0.08)	(0.13)				(0.11)	(0.16)	
Closely Held Shares			-0.24***	-0.20***				-0.02	0.00	
			(0.02)	(0.03)				(0.03)	(0.05)	
log(Assets)			0.95***	-0.43				2.47**	6.05***	
			(0.29)	(0.49)				(1.06)	(2.17)	
Cash/Total Assets			13.43**	8.71				-7.71*	-7.87	
			(2.93)	(6.02)				(4.29)	(9.47)	
Expanded Firm Variables				yes					yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	13,977	13,779	7,473	2,762	13,977	13,779	13,977	7,473	2,762	13,977
R ²	0.00	0.42	0.46	0.437	0.57	0.57	0.78	0.79	0.783	
Adjusted-*R²*	0.00	0.42	0.46	0.43	0.57	0.57	0.72	0.73	0.683	
Additional Adjusted-*R²*		0.42	0.04	0.01	0.57	0.57	0.15	0.16	0.11	
Country Random Effect										18.58
										(2.84)
Firm Random Effect										11.57
										(0.23)
Residual										15.44
										(0.10)

Panel C: Nested ANOVA Results for GRI Developed Economies Only - Index CGQ		
Source of Variation	**Additional *R ²***	**Additional Adjusted-*R ²***
Year	0.11%	0.07%
Country	55.9	55.85
Firm	19.99	14.12

Panel D: Nested ANOVA Results for GRI Developed Economies Only - Industry CGQ		
Source of Variation	**Additional *R ²***	**Additional Adjusted-*R ²***
Year	0.10%	0.06%
Country	57.13	57.08
Firm	19.13	13.43

Appendix 1: Country Statistics

This table presents the summary statistics for all countries represented in our dataset, broken down by market type and by data. The first set of country statistics found in Panel A below come from the CLSA emerging economies data. Panel B has country breakdowns for the developed economies in the CLSA data. As can be seen below, the CLSA data is dominated by emerging economies and the emerging and developed economies contain firms with maximum scores close to each other. The *corporate governance quotient (CGQ)* summary statistics by country are located in Panels C and D of this table. We chose to only look at the *Index CGQ* , as any trends in the country statistics should be visible in either score. This outcome variable has also been winsorized at the 1% level. As can be seen below, the CGQ data spans a number of countries and are dominated by developed economies and again, the emerging and developed economies contain firms with maximum scores close to each other.

Panel A: CLSA Emerging Economies

Country	Observations	Mean	St. Dev.	Median	Min	Max	25th Per	75th Per
Argentina	2	59.7	10.0	59.6	52.6	66.7	52.6	66.7
Brazil	58	59.9	11.6	61.2	34.6	83.9	53.5	67.8
Chile	14	62.0	5.4	60.4	52.7	72.2	59.4	66.4
China	400	45.1	15.8	46.7	5.4	74.6	36.2	56.7
Colombia	1	51.4	.	51.4	51.4	51.4	51.4	51.4
Czech Republic	2	47.8	5.2	47.8	44.1	51.4	44.1	51.4
Hong Kong	719	55.0	13.6	56.1	5.4	83.9	46.8	64.8
Hungary	4	51.9	6.9	51.0	45.3	60.4	46.4	57.5
India	571	52.3	12.4	51.4	5.4	83.9	43.4	61.0
Indonesia	166	42.0	16.8	40.0	5.4	79.3	32.4	52.0
Malaysia	302	57.8	13.1	58.5	12.0	83.9	50.6	65.9
Mexico	15	63.9	9.3	66.7	39.0	74.2	62.1	69.9
Pakistan	11	34.0	13.5	30.7	18.9	65.6	25.3	43.0
Peru	3	73.1	3.0	71.5	71.2	76.5	71.2	76.5
Philippines	107	50.2	17.4	53.7	7.7	83.0	36.6	63.5
Poland	4	40.5	6.9	38.9	34.0	50.3	36.2	44.9
Russia	2	22.1	9.4	22.1	15.4	28.7	15.4	28.7
Singapore	304	59.4	10.5	59.6	34.1	83.9	51.1	66.7
South Africa	53	69.8	8.9	69.7	45.0	81.8	64.9	78.4
South Korea	344	53.8	15.0	54.7	5.4	81.0	45.3	64.7
Taiwan	455	53.6	12.7	54.6	5.4	83.9	47.4	61.6
Thailand	224	61.7	12.6	63.6	21.7	83.9	54.8	69.8

Panel B: CLSA Developed Economies

Country	Observations	Mean	St. Dev.	Median	Min	Max	25th Per	75th Per
Australia	38	62.8	20.2	70.5	5.4	83.9	53.1	78.0
Canada	6	56.6	15.7	61.7	30.9	71.0	45.5	68.9
Greece	2	57.2	5.2	57.2	53.5	60.8	53.5	60.8
Japan	72	57.9	16.2	55.8	5.4	83.9	50.5	69.9
New Zealand	2	83.9	0.0	83.9	83.9	83.9	83.9	83.9
Norway	1	80.2	.	80.2	80.2	80.2	80.2	80.2
Spain	2	45.6	1.6	45.6	44.4	46.7	44.4	46.7
Switzerland	2	82.6	0.0	82.6	82.6	82.6	82.6	82.6
Turkey	30	41.9	14.0	39.8	10.5	63.1	34.7	53.9
United Kingdom	28	72.6	10.9	77.0	46.9	83.9	66.2	81.7
United States	27	55.2	12.3	54.1	22.8	83.9	48.1	62.6

Panel C: Emerging Economies - Index CGQ

Country	Observations	Mean	St. Dev.	Median	Min	Max	25th Per	75th Per
Bermuda	113	63.6	25.1	65.5	2.7	99.7	49.3	81.9
Cayman Islands	47	59.5	18.2	59.2	14.6	99.1	47.3	74.7
Gibralter	4	69.6	4.7	65.5	73.8	69.6	65.6	73.7
Guernsey	5	76.7	4.8	77.4	72.3	84.1	72.4	77.5
Hong Kong	660	39.6	19.2	43.2	1.7	95.0	24.6	53.2
Israel	10	39.2	16.5	43.5	11.6	59.7	30.9	51.5
Jersey	7	69.8	2.4	70.9	67.0	72.4	67.3	72.4
Liberia	5	77.7	20.9	73.5	53.1	99.2	63.5	99.0
Marshall Islands	5	63.1	6.8	60.7	56.7	70.4	57.4	70.3
Netherlands Antilles	9	50.7	47.1	74.6	0.9	99.8	2.4	4.3
Panama	2	42.4	0.5	42.4	42.0	42.7	42.0	42.7
Singapore	474	54.2	21.0	54.7	0.5	99.6	42.9	68.8
South Korea	67	46.3	15.1	47.6	4.0	76.1	38.6	57.1

Panel D: Developed Economies - Industry CGQ

Country	Observations	Mean	St. Dev.	Median	Min	Max	25th Per	75th Per
Australia	696	66.4	18.9	66.2	1.4	100.0	54.1	79.6
Austria	156	41.8	25.1	43.7	0.1	97.7	23.0	58.1
Belgium	176	29.1	22.1	27.6	0.0	82.4	8.1	46.6
Canada	1320	52.7	28.6	54.6	0.5	100.0	28.5	76.7
Denmark	173	28.1	22.5	23.0	0.4	85.7	7.7	46.1
Finland	229	54.3	26.3	59.7	2.4	99.8	35.2	75.7
France	587	58.9	23.4	63.3	0.1	99.3	48.0	75.0
Germany	631	51.4	19.1	52.6	2.1	99.4	41.0	64.6
Greece	286	17.0	19.9	7.3	0.0	78.3	2.1	25.5
Ireland	118	76.9	15.2	78.7	6.0	99.7	69.8	86.4
Italy	500	43.1	22.8	50.0	0.2	92.7	22.2	59.2
Japan	4145	28.3	16.3	26.7	0.1	90.2	15.9	37.0
Luxembourg	29	28.0	17.4	27.7	2.6	60.1	14.6	42.3
Netherlands	319	50.1	27.0	56.8	0.5	100.0	26.3	69.3
New Zealand	124	58.7	17.0	59.3	10.1	96.8	45.6	70.2
Norway	173	30.9	21.9	27.3	0.3	89.3	11.5	47.9
Portugal	96	14.0	16.1	7.0	0.1	63.9	2.0	21.2
Spain	375	36.4	25.2	40.5	0.1	95.5	10.7	55.6
Sweden	350	40.2	26.2	43.4	0.3	98.8	13.0	60.2
Switzerland	411	66.9	22.2	71.1	1.1	100.0	49.2	83.3
Turkey	61	27.7	13.8	25.3	0.1	57.6	18.7	40.2
United Kingdom	3022	83.7	12.6	86.2	0.0	100.0	77.2	93.1

Appendix 2 - CLSA Multinationals Robustness Tests

The models below explore the relative importance of firms and countries in explaining corporate governance variance and what impact multinationals firms have on this importance. The table shows that, regardless of whether we look at multinationals or single market firms in emerging economies, the importance of firm characteristics is greater than that of country characteristics. We determined multinationals by matching the firms in the CLSA data to firms listed in the Directory of Corporate Affiliations (DCA). Multinationals were determined by whether or not they had subsidiaries in foreign countries. Panel A explores the OLS results whiles Panel B and C looks at the Nested ANOVA models. In the top highlighted row of Panel A, we see the entire sample of firms in emerging economies. The middle highlighted row shows multinations in emerging economies and the bottom highlighted row shows single market firms in emerging economies. Comparing all three samples on top of each other, we see that the results are roughly the same across the board. Firms take on a greater importance in emerging markets regardless of whether they are multinationals or single market firms. The Nexted Anova results confirm this result.

Panel A: OLS Results

Independent Variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***
Expanded Firm Variables				yes					yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes			
Firm FE							yes	yes	yes
R²	0.08	0.13	0.13	0.24	0.21	0.23	0.73	0.75	0.80
Adjusted-*R²*	0.08	0.13	0.12	0.20	0.21	0.22	0.61	0.61	0.64
Additional Adjusted-*R²* for All Firms		0.05	-0.01	0.08	0.13	0.15	0.40	0.39	0.42
Adjusted-*R²* for Multinationals	0.112	0.124	0.106	0.207	0.170	0.158	0.623	0.561	0.649
Additional Adjusted-*R²* for Multinationals		0.01	-0.02	0.08	0.06	0.05	0.45	0.40	0.49
Adjusted-*R²* for Single Market Firms	0.0711	0.153	0.157	0.306	0.248	0.268	0.634	0.608	0.658
Additional Adjusted-*R²* for Single Market Firms		0.08	0.00	0.15	0.18	0.20	0.39	0.34	0.39

Panel B: Nested ANOVA Results for Multinationals

Source of Variation	**Additional *R²***	**Additional Adjusted-*R²***
Year	12.00%	11.25%
Country	5.31	3.48
Firm	62.57	47.55

Panel C: Nested ANOVA Results for Single Market Firms

Source of Variation	**Additional *R²***	**Additional Adjusted-*R²***
Year	7.20%	6.81%
Country	18.18	17.46
Firm	51.79	39.28

Appendix 3 - GRI Developed Economies Except the United Kingdom and Japan

The table below examines the relative importance of firms and countries in explaining variance in the corporate governance quotient (CGQ). Specifically, these tables are intended to explore the importance of the United Kingdom and Japan in our developed economy results. We test this by excluding these two markets together and compare our results to those for the full set of developed economies. Panel A gives the results for models using the Index CGQ while Panel B gives the results for the Industry CGQ. We see below that removing the UK and Japan weakens the importance of countries relative to firms, and that this is especially true for the Index CGQ. Models 5-9 in Panel A show that, by removing the UK and Japan, firms and countries are roughly at parity in importance. However, also in Panel A, we see that country characteristics are more important than firm characteristics in Models 2 and 4 and that countries are more important than firms for the random effects model. In Panel B, the importance of countries in explaining variance remains strong through all models. Thus, we can also see that removing these two countries does not change our finding about the importance of country characteristics in developed economies. We can be confident that our trend is not driven by specific countries. Correlations are marked with an * for 5% significance, ** for 1% significance, and *** for 0.1% significance.

Panel A: OLS and Random Effects Results for Index CGQ

Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		2.72***	1.69***	1.97***		0.79		0.18	3.703	
		(0.35)	(0.47)	(0.62)		(0.87)		(2.83)	(4.44)	
GDP per capita		0.00	-0.00***	-0.00**		0.00*		0.00	0.00	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		0.09***	0.08***	0.10***		0.01		0.05*	0.07*	
		(0.01)	(0.02)	(0.02)		(0.01)		(0.03)	(0.04)	
Sales Growth			-0.02	-0.03				-0.01	-0.03	
			(0.02)	(0.03)				(0.02)	(0.04)	
Financial Dependence			-0.09	-0.22				-0.26	-0.20	
			(0.16)	(0.32)				(0.28)	(0.37)	
Closely Held Shares			-0.20***	-0.19***				-0.02	0.03	
			(0.03)	(0.04)				(0.04)	(0.07)	
log(Assets)			3.04***	2.86***				3.12*	2.83	
			(0.45)	(0.76)				(1.64)	(3.68)	
Cash/Total Assets			22.20***	13.56				-11.58	-18.82	
			(5.65)	(13.55)				(7.53)	(18.23)	
Expanded Firm Variables				yes					yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	6,810	6,659	3,382	1,832	6,810	6,659	6,810	3,382	1,832	6,810
R²	0.01	0.10	0.13	0.16	0.27	0.26	0.66	0.63	0.65	
Adjusted-*R²*	0.01	0.09	0.13	0.15	0.26	0.26	0.57	0.53	0.52	
Additional Adjusted-*R²*		0.09	0.03	0.05	0.25	0.25	0.31	0.27	0.26	
Country Random Effect										16.23
										(2.67)
Firm Random Effect										15.36
										(0.40)
Residual										17.93
										(0.17)

Panel B: OLS and Random Effects Results for Industry CGQ

Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		4.11***	2.95***	3.08***		0.39		0.18	2.16	
		(0.35)	(0.48)	(0.61)		(0.75)		(2.71)	(4.13)	
GDP per capita		-0.00**	-0.00***	-0.00***		0.00		0.00*	0.00	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		0.12***	0.11***	0.12**		0.00		0.01	0.02	
		(0.01)	(0.02)	(0.02)		(0.01)		(0.03)	(0.04)	
Sales Growth			-0.01	-0.02				-0.01	-0.04	
			(0.02)	(0.03)				(0.02)	(0.03)	
Financial Dependence			-0.05	-0.23				-0.22	-0.29	
			(0.12)	(0.24)				(0.24)	(0.39)	
Closely Held Shares			-0.26***	-0.21***				-0.02	0.02	
			(0.03)	(0.04)				(0.04)	(0.07)	
log(Assets)			3.35***	2.45***				2.63	3.24	
			(0.43)	(0.76)				(1.63)	(3.63)	
Cash/Total Assets			24.07**	20.55				-13.26*	-23.24	
			(5.37)	(12.49)				(7.37)	(17.77)	
Expanded Firm Variables				yes					yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	6,810	6,659	3,382	1,832	6,810	6,659	6,810	3,382	1,832	6,810
R²	0.01	0.15	0.20	0.21	0.36	0.36	0.69	0.67	0.67	
Adjusted-*R²*	0.00	0.15	0.19	0.20	0.35	0.35	0.61	0.57	0.55	
Additional Adjusted-*R²*		0.15	0.04	0.05	0.35	0.35	0.25	0.21	0.20	
Country Random Effect										17.17
										(2.79)
Firm Random Effect										14.02
										(0.38)
Residual										17.34
										(0.17)

Appendix 4: GRI Emerging Economies Nested ANOVA Results with Industry Included

The tables below shows the coefficient estimates from the Nested ANOVA models of emerging economies corporate governance quotient variance. In contrast to previous emerging economies CGQ results using ANOVA specifications, the models below include industry as an intermediate level of analysis. We understand industry to be embedded within years, but crossing countries, so we proceed with the following hiearchy in our analysis: year, industry, country, and firm. These tables are intended to explore whether our previous results for firms (that firms explain greater variance than countries in emerging economies) are actually capturing industry effects. Panels A and B focuses on the 2-digit SIC codes for the Index and Industry CGQ's, respectively. Panels C and D focus on the 3-digit SIC codes for the Index and Industry CGQ's, again respectively. What we see in the results below is that industry does capture some of the variation in corporate governance ratings. The more specific 3-digit SIC code is consistently more important than countries and for the index CGQ even rivals firms. However, the main result holds even to the inclusion of industry effects: the importance of firm effects in explaining ratings variation is still larger than country effects. Nested ANOVA was chosen for this analysis for its ability to easily display the additiona contribution to variance explained by the different levels of analysis in one simple table.

Panel A: Index CGQ, 2-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	17.06%	16.71%
Industry	14.46%	12.06%
Country	12.95	12.91
Firm	30.28	25.76

Panel B: Industry CGQ, 2-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	14.50%	14.13%
Industry	14.62%	12.14%
Country	11.04	10.88
Firm	33.53	28.93

Panel C: Index CGQ, 3-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	17.06%	16.71%
Industry	24.41%	19.57%
Country	10.88	11.35
Firm	22.4	19.81

Panel D: Industry CGQ, 3-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	14.50%	14.13%
Industry	24.72%	19.71%
Country	9.02	9.28
Firm	25.45	22.96

Appendix 5: GRI Developed Economies Nested ANOVA Results with Industry Included

The tables below shows the coefficient estimates from the Nested ANOVA models of variance in developed economies' corporate governance quotient (CGQ). In contrast to previous developed economy CGQ results using ANOVA specifications, the models below include industry as an intermediate level of analysis. We understand industry to be embedded within years, but crossing countries, so we proceed with the following hiearchy in our analysis: year, industry, country, and firm. These tables are intended to explore whether our previous results that countries explain greater variance than firms in developed economies is actually capturing industry effects. Panels A and B focuses on the 2-digit SIC codes for the Index and Industry CGQ's, respectively. Panels C and D focus on the 3-digit SIC codes for the Index and Industry CGQ's, again respectively. What we see in the results below is that industry does capture some of the variation in corporate governance ratings, however it is very small. It is even smaller than that captured in the emerging economies. Therefore, industry plays an insignificant role in explaining the results we find in developed economies. Nested ANOVA was chosen for this analysis for its ability to easily display the additiona contribution to variance explained by the different levels of analysis in one simple table.

Panel A: Index CGQ, 2-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	0.11%	0.07%
Industry	5.29%	4.81%
Country	51.77	51.99
Firm	18.75	13.21

Panel B: Industry CGQ, 2-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	0.10%	0.06%
Industry	4.42%	3.84%
Country	55.05	55.3
Firm	16.78	11.41

Panel C: Index CGQ, 3-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	0.11%	0.07%
Industry	12.77%	11.03%
Country	46.06	46.94
Firm	16.98	12.04

Panel D: Industry CGQ, 3-digit SIC Codes

Source of Variation	Additional R^2	Additional Adjusted-R^2
Year	0.10%	0.06%
Industry	11.53%	9.77%
Country	49.92	50.87
Firm	14.8	9.91

Appendix 6 - GRI Emerging Economies, Excluding Tax Havens

The tables below show the coefficient estimates of models using the Corporate Governance Quotient (CGQ) with emerging economies, but exlcuding tax havens. These small, island countries are present throughout the CGQ data and were classified as emerging given our definition of OECD membership in 1990. We wanted to ensure that these unique countries are not biasing our results in any direction. The regressions below explore the relative importance of countries and firm in explaining corporate governance ratings of firms in emerging economies. For the OLS models, Model 1-9, we analyze additional Adjusted-R^2 to determine additional variance explained by each set of variables, as we've done in previous tables. In Model 10, we use random effects, which accounts for the hierarchical nature of the data with a single regression. Panels A and B present OLS and random effects results for the *Index CGQ,* and the *Industry CGQ,* respectively. Panels C and D present Nested ANOVA results, again for the *Index* and *Industry CGQ*'s, respectively. The results below show that the importance of firms effects in emerging economies does not depend on the inclusion of tax havens. Firm variables continue to explain greater governance variance than country variables do, even on this restricted sample of emerging economies without tax havens. The one exception to this is the random effects model in Panel A, which looks at the *Index CGQ*. Here, the country random effect is larger than the firm random effects. However, the difference between these two numbers is not statistically significant. Thus, we take these results together to confirm our overall finding that, in emerging economies, firm characteristics range from anywhere to roughly equal to significantly more important than country charcteristics in explain corporate governance variance. Correlations are marked with an * for 5% significance, ** for 1% significance, and *** for 0.1% significance.

Panel A: OLS and Random Effects Results for Index CGQ

Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		2.68	2.65	6.97**		-0.84		8.38*	12.55	
		(1.90)	(2.44)	(3.01)		(2.23)		(4.44)	(8.28)	
GDP per capita		0.00	0.00	0.00		0.00		0.00	-0.0**	
		(0.00)	(0.00)	(0.00)		(0.00)		(0.00)	(0.00)	
Stock Market Cap/GDP		-0.03**	-0.03	-0.04**		0.03**		0.03***	0.03	
		(0.01)	(0.02)	(0.02)		(0.01)		(0.01)	(0.02)	
Sales Growth			0.03	0.07				0.02	0.04	
			(0.02)	(0.06)				(0.02)	(0.06)	
Financial Dependence			0.17	-1.03				-0.18	2.01	
			(0.19)	(0.67)				(0.25)	(1.54)	
Closely Held Shares			0.04	0.04				0.05	0.12	
			(0.08)	(0.08)				(0.07)	(0.13)	
log(Assets)			-0.38	-0.41				-4.48**	8.66	
			(1.02)	(1.40)				(2.24)	(6.05)	
Cash/Total Assets			-1.60	-0.93				-24.02**	-33.11	
			(10.14)	(14.31)				(10.19)	(27.33)	
Expanded Firm Variables									yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	1,223	1,110	666	293	1,223	1,110	1,223	666	293	1,223
R^2	0.20	0.26	0.25	0.421	0.33	0.35	0.73	0.79	0.847	
Adjusted-R^2	0.20	0.25	0.24	0.354	0.33	0.34	0.66	0.71	0.736	
Additional Adjusted-R^2		0.05	-0.02	0.10	0.13	0.14	0.33	0.37	0.39	
Country Random Effect										13.57
										(7.03)
Firm Random Effect										11.94
										(0.67)
Residual										12.32
										(0.28)

Panel B: OLS and Random Effects Results for Industry CGQ										
Independent variables	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***
	OLS	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***	***RE***
Antidirector x Legal		2.78	2.76	0.06		-1.12		7.39	0.04	
		(1.96)	(2.28)	(0.05)		(2.52)		(4.70)	(0.06)	
GDP per capita		0.00	0.00	-1.00		0.00		0.00	1.82	
		(0.00)	(0.00)	(0.70)		(0.00)		(0.00)	(1.97)	
Stock Market Cap/GDP		-0.03**	-0.03*	-0.01		0.02		0.02	0.04	
		(0.01)	(0.01)	(0.09)		(0.01)		(0.01)	(0.14)	
Sales Growth			0.03	0.00				0.01	8.36	
			(0.02)	(1.43)				(0.02)	(6.83)	
Financial Dependence			0.18	12.02				-0.22	-33.73	
			(0.17)	(16.23)				(0.28)	(29.36)	
Closely Held Shares			-0.03	7.17**				0.00	13.46	
			(0.08)	(2.97)				(0.07)	(8.17)	
log(Assets)			0.02	0.00				-4.78**	-0.00*	
			(1.10)	(0.00)				(2.30)	(0.00)	
Cash/Total Assets			5.20	-0.04**				-22.53*	0.02	
			(10.70)	(0.02)				(11.50)	(0.02)	
Expanded Firm Variables									yes	
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country FE					yes	yes				
Firm FE							yes	yes	yes	
Observations	1,223	1,110	666	293	1,223	1,110	1,223	666	293	1,223
R²	0.17	0.22	0.21	0.41	0.28	0.30	0.73	0.78	0.85	
Adjusted-*R²*	0.16	0.22	0.20	0.34	0.27	0.29	0.66	0.70	0.73	
Additional Adjusted-*R²*		0.05	-0.02	0.12	0.11	0.12	0.39	0.41	0.44	
Country Random Effect										8.67
										(6.94)
Firm Random Effect										13.38
										(0.75)
Residual										12.59
										(0.29)

Panel C: Nested ANOVA Results for Index CGQ		
Source of Variation	**Additional *R ²***	**Additional Adjusted-*R ²***
Year	20.23%	19.84%
Country	12.95	12.68
Firm	39.8	32.04

Panel D: Nested ANOVA Results for Industry CGQ		
Source of Variation	**Additional *R ²***	**Additional Adjusted-*R ²***
Year	16.77%	16.36%
Country	11.16	10.85
Firm	45.08	38.29

Appendix 7 - FTSE Variables

The following table gives the summary statistics for the FTSE ISS Corporate Governance Index scores. This data set encompasses data from 2005-2008. The first variable is the CLSA given *corporate governance score.* The next three variables are the three observable country characteristics used in our analysis. *Antidirector x Legal* captures the interaction of the *Revised Antidirector Rights Index* and the *Rule of Law* in that country. The following firm variables include the observable firm characteristics included in previous studies: *sales growth* , *financial dependence* (EBITDA based), *closely held shares* (as a percent of total shares), *log(assets)* , and *cash to assets ratio* . The remaining variables described below are additional observable firm characteristics used to capture the complex interaction between firms and corporate governance in emerging economies. The following variables below have been winsorized at the 1st/99th percentiles to remove outliers: *2yr Sales Growth, Financial Dependence, Antidirector x Legal, GDP per capita, Current Ratio, Leverage, Tobin's Q, PE Ratio, Price to Book Ratio, Quick Ratio, Return on Assets, Capital Expenditure, Cash Dividend Coverage Ratio, 3yr Dividend Growth, 5yr Income Growth, 5yr Sales Growth, Short-Term Debt, 5yr Assets Growth,* and *Total Debt (%)* .

Panel A: Summary Statistics

Variable	Median	Mean	St Dev.	Min	Max	Observations
Corporate Governance Score	3.19	3.48	1.21	1.00	5.99	9,736
Antidirector x Legal	6.01	6.11	1.63	0.81	8.52	9,719
GDP per capita	34587	32871	6676	15013	40707	9,726
Stock Market Cap / GDP	134.12	131.81	89.89	17.51	617.05	9,719
2yr Sales Growth	9.00	12.09	24.51	-51.04	124.23	9,177
Financial Dependence	-2.02	-4.24	6.94	-39.92	6.86	6,910
Closely Held Shares	22.08	27.22	23.14	0.00	100.00	8,282
Log (Assets)	15.64	15.70	1.85	8.94	22.05	9,228
Cash/Total Assets	0.08	0.16	1.42	0.00	101.96	7,662
Fixed Assets/Total Assets	0.21	0.28	0.25	0.00	0.99	9,126
SEC Compliance	0.00	0.10	0.30	0.00	1.00	9,728
CurrentRatio	1.34	1.69	1.19	0.32	7.57	7,303
Leverage	0.59	0.58	0.27	0.00	1.57	8,718
PE Ratio	15.95	17.39	24.47	-82.85	145.00	7,556
Price-to-book Ratio	1.98	2.68	2.67	-3.15	16.88	7,333
Quick Ratio	0.91	1.19	1.06	0.12	6.97	7,282
Return on Assets	5.72	6.43	7.85	-26.09	33.80	9,169
R&D Intensity (expenditure as a % of sales)	0.00	0.36	2.27	0.00	76.23	9,732
CapitalExpenditure	4.05	5.35	5.31	0.00	28.95	8,679
Cash Dividend Coverage Ratio	4.84	7.57	8.67	-2.05	54.99	6,938
3yr Dividend Growth	9.56	10.87	26.28	-100.00	94.28	8,531
5yr Income Growth	10.49	13.48	20.57	-29.92	101.17	7,849
5yr Sales Growth	7.57	9.62	12.97	-20.00	63.29	8,918
Short-Term Debt	183524	5144406	25200000	0.00	207000000	9,151
5yr Assets Growth	7.10	9.47	13.25	-21.12	60.35	8,878
Total Debt (%)	53.89	131.99	268.63	-271.39	1729	9,224

Panel B: Correlations

	Corporate Governance Score	Antidirector x Legal	GDP per capita	Stock Market Cap / GDP	2yr Sales Growth	Financial Dependence	Closely Held Shares	Log (Assets)	Cash/Total Assets	Fixed Assets/ Total Assets	SEC Compliance	Current Ratio	Leverage	PE Ratio	Price-to-book Ratio	Quick Ratio	Return on Assets	Intensity (expenditure as a % of	Capital Expenditure	Dividend Coverage Ratio	3yr Dividend Growth	5yr Income Growth	5yr Sales Growth	Short-Term Debt	5yr Assets Growth	Total Debt (%)
Corporate Governance Score	1																									
Antidirector x Legal	0.57***	1																								
GDP per capita	-0.54***	-0.23***	1																							
Stock Market Cap / GDP	-0.04***	0.278***	0.08***	1																						
2yr Sales Growth	0.01	0.03***	-0.07***	0.09***	1																					
Financial Dependence	0.00	0.02	-0.03***	-0.01	-0.08***	1																				
Closely Held Shares	-0.10***	0.10***	-0.13***	0.22***	0.04***	0.03***	1																			
Log (Assets)	-0.20***	-0.42***	0.09***	-0.10***	0.03***	-0.09***	-0.18***	1																		
Cash/Total Assets	0.01	0.03***	-0.01	0.00	-0.03**	-0.01	0.00	-0.08***	1																	
Fixed Assets/Total Assets	0.01	0.05***	-0.01	0.03**	0.00	0.36***	0.02*	-0.08***	-0.05***	1																
SEC Compliance	0.21***	0.03***	-0.15***	0.00	0.00	0.05***	-0.08***	0.21***	-0.01	0.05***	1															
CurrentRatio	-0.12***	0.00	0.14***	0.12***	0.02	-0.11***	0.07***	-0.24***	0.05***	-0.28***	-0.04***	1														
Leverage	0.09***	-0.04***	-0.12***	-0.15***	-0.05***	-0.09***	-0.14***	0.29***	0.09***	-0.10***	0.03***	-0.48***	1													
PE Ratio	-0.07***	-0.05***	0.07***	0.01	0.02	-0.03*	0.01	-0.06***	0.00	0.03**	-0.04***	0.03**	-0.06***	1												
Price-to-book Ratio	0.06***	-0.04***	-0.06***	0.06***	0.08***	-0.03**	-0.05***	-0.17***	0.04***	-0.03***	0.01	0.00	0.01	0.12***	1											
Quick Ratio	-0.10***	0.01	0.11***	0.14***	0.05***	-0.10***	0.10***	-0.23***	0.05***	-0.25***	-0.02	0.92***	-0.45***	0.04***	0.03**	1										
Return on Assets	0.04***	0.03**	-0.07***	0.12***	0.12***	0.01	0.01	-0.15***	-0.03***	0.08***	0.03***	0.11***	-0.26***	0.08***	0.39***	0.11***	1									
R&D Intensity (expenditure as a % of sales)	-0.08***	-0.09***	0.06***	-0.03***	-0.03***	0.02	-0.04*	-0.05***	0.01	-0.05***	0.02	0.16***	-0.09***	0.05***	0.08***	0.17***	0.01	1								
CapitalExpenditure	0.0241**	0.03**	-0.03***	0.00	0.12***	0.28***	0.00	-0.10***	-0.03***	0.59***	0.07***	-0.14***	-0.08***	0.01	0.08***	-0.11***	0.20***	-0.05***	1							
Cash Dividend Coverage Ratio	-0.23***	-0.18***	0.27***	-0.08***	0.09***	0.07***	-0.04***	0.18***	-0.04***	0.09***	0.04***	-0.05***	0.05***	0.01	-0.07***	-0.04***	-0.07***	0.00	0.23***	1						
3yr Dividend Growth	-0.07***	-0.03**	0.07***	0.03***	0.17***	-0.06***	0.01	0.08***	-0.05***	0.02	0.03***	0.06***	-0.12***	0.03**	0.10***	0.06***	0.26***	-0.07***	0.09***	0.05***	1					
5yr Income Growth	-0.02*	-0.01	-0.02*	0.02**	0.33***	-0.08***	-0.01	0.05***	-0.02	-0.07***	0.02	0.02	-0.03**	-0.03***	0.11***	0.04***	0.22***	-0.03*	0.11***	0.15***	0.27***	1				
5yr Sales Growth	-0.02*	0.02*	-0.04***	0.11***	0.45***	-0.07***	0.01	-0.01	-0.03***	0.01	-0.01	0.06***	-0.08***	0.01	0.09***	0.07***	0.11***	0.00	0.18***	0.10***	0.14***	0.56***	1			
Short-Term Debt	0.03***	-0.09***	-0.07***	-0.06***	0.04***	-0.21***	-0.05***	0.46***	-0.01	-0.18***	0.13***	-0.11***	0.18***	-0.05***	-0.07***	-0.09***	-0.11***	-0.01	-0.15***	0.04***	-0.02**	-0.02	0.01	1		
5yr Assets Growth	0.02	0.02**	-0.08***	0.09***	0.36***	-0.12***	0.00	0.06***	-0.03**	-0.06***	-0.05***	0.06***	-0.08***	0.02	0.06***	0.06***	0.11***	-0.03**	0.16***	0.05***	0.13***	0.45***	0.74***	0.05***	1	
Total Debt (%)	0.03***	-0.09***	-0.11***	-0.08***	0.04***	-0.12***	-0.02**	0.38***	-0.02	-0.07***	0.05***	-0.19***	0.34***	-0.05***	0.15***	-0.17***	-0.15***	-0.02	-0.11***	0.08***	-0.08***	-0.04***	0.02*	0.54***	0.05***	1

Appendix 8: Firms in Emerging Economies Achieving World-Class Corporate Governance

This table presents a breakdown of how many firms achieved top-level corporate governance in emerging economies. We show this by comparing ratings given to emerging economy firms to ratings given to developed economies with top governance. The CLSA data is compared to the United States and the CGQ scores are compared to the United Kingdom, as the U.S. does not exist in that data. These scores are listed by year to provide a sense of how they change over time. Thus, for each year, we present the U.S. median and 75th percentile scores, the percentage of firms in that country above the U.S. median and 75th percentile, and the total number of firms. The same statistics are presented for the *Index CGQ* data as compared to the U.K. in Panel B. These statistics suggest that many firms, especially in the CLSA sample, are achieving world-class governance. Many emerging economy firms were able to rank above the US governance score's 75th percentile. For the CGQ, fewer firms are achieving the top scores in the U.K. However, these numbers increase over the years they're presented suggesting that firms in emerging economies improved their governance over this time period and more firms achieved world-class corporate governance scores by 2009.

Panel A: CLSA Emerging Economies

Country	Year	US Median	% Firms Above US Median	Total # Firms	US 75th Percentile	% Firms Above US 75th Percentile
Argentina	2000					
	2001	56.6	100.0	1	62.6	100.0
	2002	66.1	0.0	1	70.1	0.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Brazil	2000					
	2001	56.6	75.0	28	62.6	50.0
	2002	66.1	17.9	28	70.1	14.3
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Chile	2000					
	2001	56.6	100.0	7	62.6	28.6
	2002	66.1	28.6	7	70.1	14.3
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
China	2000					
	2001	56.6	12.5	16	62.6	6.3
	2002	66.1	0.0	22	70.1	0.0
	2003					
	2004	54.1	45.0	40	54.1	45.0
	2005	49.1	67.4	46	49.1	67.4
	2006					
	2007	58.6	19.6	107	58.9	19.6
	2008	48.3	32.1	131	53.6	22.1
	2009	66.0	0.0	10	69.1	0.0
	2010	71.5	18.2	22	71.5	18.2
Colombia	2000					
	2001	56.6	.	.	62.6	.
	2002	66.1	0.0	1	70.1	0.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Czech Republic	2000					
	2001	56.6	0.0	1	62.6	0.0
	2002	66.1	0.0	1	70.1	0.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.

Hong Kong	2000					
	2001	56.6	63.3	49	62.6	51.0
	2002	66.1	25.4	63	70.1	6.4
	2003					
	2004	54.1	73.8	80	54.1	73.8
	2005	49.1	69.0	58	49.1	69.0
	2006					
	2007	58.6	36.4	140	58.9	36.4
	2008	48.3	72.0	239	53.6	48.1
	2009	66.0	27.5	40	69.1	22.5
	2010	71.5	14.3	28	71.5	14.3
Hungary	2000					
	2001	56.6	50.0	2	62.6	0.0
	2002	66.1	0.0	2	70.1	0.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
India	2000					
	2001	56.6	37.8	74	62.6	21.6
	2002	66.1	25.8	66	70.1	16.7
	2003					
	2004	54.1	50.0	66	54.1	50.0
	2005	49.1	100.0	5	49.1	100.0
	2006					
	2007	58.6	19.3	119	58.9	19.3
	2008	48.3	57.1	112	53.6	32.1
	2009	66.0	9.5	116	69.1	4.2
	2010	71.5	0.0	2	71.5	0.0
Indonesia	2000					
	2001	56.6	10.5	19	62.6	10.5
	2002	66.1	5.9	17	70.1	5.9
	2003					
	2004	54.1	20.0	35	54.1	20.0
	2005	49.1	50.0	2	49.1	50.0
	2006					
	2007	58.6	24.3	37	58.9	24.3
	2008	48.3	27.3	44	53.6	20.5
	2009	66.0	25.0	4	69.1	0.0
	2010	71.5	0.0	2	71.5	0.0
Malaysia	2000					
	2001	56.6	61.7	47	62.6	36.2
	2002	66.1	46.5	43	70.1	41.9
	2003					
	2004	54.1	84.8	46	54.1	84.8
	2005	49.1	92.3	13	49.1	92.3
	2006					
	2007	58.6	37.5	32	58.9	37.5
	2008	48.3	71.6	67	53.6	52.2
	2009	66.0	37.5	16	69.1	37.5
	2010	71.5	2.8	36	71.5	2.8
Mexico	2000					
	2001	56.6	75.0	8	62.6	62.5
	2002	66.1	57.1	7	70.1	14.3
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Pakistan	2000					
	2001	56.6	9.1	11	62.6	9.1
	2002	66.1	.	.	70.1	.
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Peru	2000					
	2001	56.6	100.0	1	62.6	100.0
	2002	66.1	100.0	1	70.1	100.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Philippines	2000					
	2001	56.6	8.7	23	62.6	8.7
	2002	66.1	7.7	13	70.1	7.7
	2003					
	2004	54.1	68.8	16	54.1	68.8
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	30.8	26	58.9	30.8
	2008	48.3	75.0	24	53.6	54.2
	2009	66.0	0.0	1	69.1	0.0
	2010	71.5	.	.	71.5	.

Poland	2000					
	2001	56.6	0.0	2	62.6	0.0
	2002	66.1	0.0	2	70.1	0.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Russia	2000					
	2001	56.6	0.0	1	62.6	0.0
	2002	66.1	0.0	1	70.1	0.0
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
Singapore	2000					
	2001	56.6	79.6	44	62.6	75.0
	2002	66.1	54.1	37	70.1	24.3
	2003					
	2004	54.1	74.4	39	54.1	74.4
	2005	49.1	100.0	10	49.1	100.0
	2006					
	2007	58.6	27.1	48	58.9	22.9
	2008	48.3	72.4	87	53.6	48.3
	2009	66.0	16.7	12	69.1	16.7
	2010	71.5	36.4	11	71.5	36.4
South Africa	2000					
	2001	56.6	87.5	32	62.6	87.5
	2002	66.1	58.8	17	70.1	47.1
	2003					
	2004	54.1	.	.	54.1	.
	2005	49.1	.	.	49.1	.
	2006					
	2007	58.6	.	.	58.9	.
	2008	48.3	.	.	53.6	.
	2009	66.0	.	.	69.1	.
	2010	71.5	.	.	71.5	.
South Korea	2000					
	2001	56.6	4.2	24	62.6	0.0
	2002	66.1	33.3	30	70.1	23.3
	2003					
	2004	54.1	60.4	48	54.1	60.4
	2005	49.1	76.7	73	49.1	76.7
	2006					
	2007	58.6	26.2	65	58.9	24.6
	2008	48.3	62.4	93	53.6	41.9
	2009	66.0	33.3	3	69.1	33.3
	2010	71.5	0.0	4	71.5	0.0
Taiwan	2000					
	2001	56.6	43.2	44	62.6	15.9
	2002	66.1	23.4	47	70.1	12.8
	2003					
	2004	54.1	57.1	49	54.1	57.1
	2005	49.1	83.7	49	49.1	83.7
	2006					
	2007	58.6	26.1	92	58.9	25.0
	2008	48.3	68.5	130	53.6	48.5
	2009	66.0	20.0	10	69.1	10.0
	2010	71.5	0.0	12	71.5	0.0
Thailand	2000					
	2001	56.6	57.1	21	62.6	38.1
	2002	66.1	23.8	21	70.1	9.5
	2003					
	2004	54.1	68.8	33	54.1	78.8
	2005	49.1	100.0	6	49.1	100.0
	2006					
	2007	58.6	76.7	43	58.9	74.4
	2008	48.3	76.1	46	53.6	65.2
	2009	66.0	65.3	49	69.1	44.9
	2010	71.5	.	.	71.5	.

Panel B: Emerging Economies - Index CGQ						
Country	Year	UK Median	% Firms Above UK Median	Total # Firms	UK 75th Percentile	% Firms Above UK 75th Percentile
Bermuda	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	18.0	93.6	0.0
	2006	86.5	5.3	19.0	93.7	5.3
	2007	86	5.3	19.0	93.3	5.3
	2008	84.4	32.1	28.0	91.4	21.4
	2009	84	41.4	29.0	91.2	31.0
Cayman Islands	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	7.0	93.6	0.0
	2006	86.5	0.0	8.0	93.7	0.0
	2007	86	0.0	8.0	93.3	0.0
	2008	84.4	8.3	12.0	91.4	8.3
	2009	84	16.7	12.0	91.2	16.7
Gibralter	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	.	.	93.6	.
	2006	86.5	.	.	93.7	.
	2007	86	.	.	93.3	.
	2008	84.4	0.0	2.0	91.4	0.0
	2009	84	0.0	2.0	91.2	0.0
Guernsey	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	1.0	93.6	0.0
	2006	86.5	0.0	1.0	93.7	0.0
	2007	86	0.0	1.0	93.3	0.0
	2008	84.4	0.0	1.0	91.4	0.0
	2009	84	0.0	1.0	91.2	0.0
Hong Kong	2003	87.3	0.0	50.0	93.4	0.0
	2004	91	1.8	56.0	95.7	0.0
	2005	86.5	0.0	110.0	93.6	0.0
	2006	86.5	0.0	109.0	93.7	0.0
	2007	86	0.0	109.0	93.3	0.0
	2008	84.4	0.0	113.0	91.4	0.0
	2009	84	0.0	113.0	91.2	0.0
Israel	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	2.0	93.6	0.0
	2006	86.5	0.0	2.0	93.7	0.0
	2007	86	0.0	2.0	93.3	0.0
	2008	84.4	0.0	2.0	91.4	0.0
	2009	84	0.0	2.0	91.2	0.0
Jersey	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	1.0	93.6	0.0
	2006	86.5	0.0	1.0	93.7	0.0
	2007	86	0.0	1.0	93.3	0.0
	2008	84.4	0.0	2.0	91.4	0.0
	2009	84	0.0	2.0	91.2	0.0
Liberia	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	1.0	93.6	0.0
	2006	86.5	0.0	1.0	93.7	0.0
	2007	86	0.0	1.0	93.3	0.0
	2008	84.4	100.0	1.0	91.4	100.0
	2009	84	100.0	1.0	91.2	100.0
Marshall Islands	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	1.0	93.6	0.0
	2006	86.5	0.0	1.0	93.7	0.0
	2007	86	0.0	1.0	93.3	0.0
	2008	84.4	0.0	1.0	91.4	0.0
	2009	84	0.0	1.0	91.2	0.0
Netherlands Antilles	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	0.0	1.0	93.6	0.0
	2006	86.5	0.0	2.0	93.7	0.0
	2007	86	50.0	2.0	93.3	50.0
	2008	84.4	50.0	2.0	91.4	50.0
	2009	84	50.0	2.0	91.2	50.0
Panama	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	.	.	93.6	.
	2006	86.5	.	.	93.7	.
	2007	86	.	.	93.3	.
	2008	84.4	0.0	1.0	91.4	0.0
	2009	84	0.0	1.0	91.2	0.0
Singapore	2003	87.3	15.8	57.0	93.4	7.0
	2004	91	0.0	58.0	95.7	0.0
	2005	86.5	0.0	67.0	93.6	0.0
	2006	86.5	0.0	68.0	93.7	0.0
	2007	86	0.0	68.0	93.3	0.0
	2008	84.4	9.0	78.0	91.4	6.4
	2009	84	9.0	78.0	91.2	6.4
South Korea	2003	87.3	.	.	93.4	.
	2004	91	.	.	95.7	.
	2005	86.5	.	.	93.6	.
	2006	86.5	.	.	93.7	.
	2007	86	0.0	14.0	93.3	0.0
	2008	84.4	0.0	14.0	91.4	0.0
	2009	84	0.0	39.0	91.2	0.0

Monitoring Global Supply Chains[†]

Jodi L. Short
UC Hastings College of the Law

Michael W. Toffel
Harvard Business School

Andrea R. Hugill
Harvard Business School

ABSTRACT

Outsourcing firms seeking to avoid reputational spillovers that can arise from dangerous, illegal, and unethical behavior at supply chain factories increasingly rely on private social auditors to provide strategic information about the conduct of their suppliers. But little is known about what influences auditors' ability to identify and report poor supplier conduct. We find that individual supply chain auditors' monitoring practices are shaped by social factors including their experience, gender, and professional training; their ongoing relationships with suppliers; and the gender diversity of their audit teams. Providing the first comprehensive and systematic findings on supply chain monitoring, our study identifies previously overlooked transaction costs and suggests strategies to develop governance structures to mitigate reputational spillover risks by reducing information asymmetries between themselves and their suppliers.

Keywords: monitoring, transaction cost economics, industry self-regulation, auditing, codes of conduct, supply chains, corporate social responsibility, globalization

[†] We gratefully acknowledge the research assistance of Melissa Ouellet as well as that of Chris Allen, John Galvin, Erika McCaffrey, and Christine Rivera. Xiang Ao, Max Bazerman, Shane Greenstein, Jeffrey Macher, Andrew Marder, Morris Ratner, Bill Simpson, Veronica Villena, and participants in the UC Hastings College of the Law Junior Faculty Workshop offered helpful comments. Harvard Business School's Division of Research and Faculty Development provided financial support.

Reputation is a key strategic concern for modern firms (Roberts and Dowling, 2002) and environmental, social, and governance (ESG) performance have become increasingly important dimensions of firm reputation. Poor ESG practices may make firms targets for activists, harming their reputations as well as their bottom lines (King and Soule, 2007), and firms are increasingly held accountable by financial analysts and investors for ESG performance (Ioannou, 2014). Furthermore, firms that mislead stakeholders about their ESG performance through inaccurate disclosure may find their reputations tarnished (Fombrun, Gardberg, and Barnett, 2000).

As firms continue to outsource production globally, their reputations have come to depend not solely on their own practices but also on those of the companies in their extended supply chains (Heide, Kumar, and Wathne, 2014), raising the risk of reputational spillover costs from these transactions. That risk is particularly high when production is outsourced to countries where labor and environmental standards are so low that suppliers commonly take "unwarranted risks in their project execution. . . that the outsourcing principal would never tolerate if it kept control of the activity" (Geis, 2007: 979). For instance, in the wake of the Rana Plaza building collapse in Bangladesh that killed 1,100 factory workers, the bulk of media, consumer, and activist scrutiny focused on the global retailers that sourced from suppliers using the building (Greenhouse, 2013a). Many of these global retailers were under such intense reputational pressure that they agreed to adopt a legally binding agreement to spend hundreds of millions of dollars to fund fire-safety and structural improvements in the factories of their Bangladeshi suppliers (Greenhouse, 2013b).

The logic of transaction cost economics (TCE) predicts that firms will vertically integrate activities that pose substantial risks to their reputations so that they have more control over execution (Mayer, 2006; Mayer, Nickerson and Owan, 2004; Nickerson and Silverman, 2003).

However, firms continue to outsource production globally to realize production cost economies and instead have sought to contain potential reputational spillover costs through intensive supplier monitoring programs that contractually impose labor and environmental standards of conduct as well as inspection for compliance (Gereffi, Humphrey, and Sturgeon, 2005; Mayer, Nickerson, and Owan, 2004; Montiel, Husted, and Christmann, 2012).

Such supplier monitoring is a transactional governance mechanism designed to provide buyer-firms with information that can help them manage supply chain risk and make strategic outsourcing decisions. However, it is not clear that buyer-firms are getting complete and accurate information from their supply chain monitors (e.g., Esbenshade, 2004; Heras-Saizarbitoria and Boiral, 2013; O'Rourke, 2002). For instance, in 2012, just weeks after social auditors certified that a factory in Pakistan met the SA8000 working conditions standard created by a respected nonprofit, a fire there killed hundreds of workers, some of whom were trapped by locked emergency exits and barred windows—clear violations of that very standard (Walsh and Greenhouse, 2012). When monitors fail to accurately assess suppliers' adherence to standards, they undermine buyer-firms' ability to make fully informed outsourcing decisions and subject these firms to the risk of catastrophic reputational consequences.

Despite the importance of supply chain monitors to firms' governance of reputation risk, little is known about how such monitors do their jobs or the validity of the information obtained through their inspections (Mayer, Nickerson, and Owan, 2004). To our knowledge, no empirical research has rigorously investigated what factors shape supply chain monitors' assessments of supplier adherence to standards. We seek to fill that gap. Grounding our work in the transaction cost economics literature and drawing insights from research on regulatory compliance, financial auditing, and bounded rationality, we argue that monitors are not merely objective conduits of

information, but instead that the information they collect and transmit is shaped by a variety of social relationships, institutions, and identities. This has important implications for outsourcing firms, because heterogeneity in auditor assessment may undermine the efficacy of the governance structures they have put into place to contain the costs of reputational spillovers.

We test our hypotheses in the context of social auditing for compliance with labor standards contained in contractually imposed supplier codes of conduct. This form of private supply chain monitoring has been adopted by thousands of prominent multinational corporations (MNCs), including all U.S. Fortune 500 companies (McBarnet, 2007), yet to our knowledge it has not been addressed in the TCE literature. We exploit a novel dataset drawn from thousands of audits for code-of-conduct compliance in over 66 countries by one of the world's largest supply chain auditing firms. We find that auditors' decisions are shaped by factors such as ongoing client relationships, professional experience, gender, and gender diversity. These findings significantly broaden the prevailing understanding of the supply chain monitoring process and suggest ways to design more effective monitoring regimes.

LITERATURE REVIEW

Decisions about outsourcing and supply chain management have become increasingly critical strategic concerns (Alcacer and Oxley, 2014; Hult, Ketchen, and Arrfelt, 2007; Reitzig and Wagner, 2010). Current concerns go beyond the paradigmatic "make or buy" dilemma (Williamson, 1975) to complex strategic questions about which suppliers to buy from. Choosing wisely can enhance a firm's value by, for instance, improving its financial performance (Doig et al., 2001) or providing opportunities to develop knowledge (Alcacer and Oxley, 2014; Hult, Ketchen, and Arrfelt, 2007). On the other hand, poor choices can subject firms to significant costs, including remediation, legal liability, and reputation damage (O'Callaghan, 2007).

To reduce the reputational risks of outsourcing and to protect brand value, firms incur significant transaction costs to monitor supplier behavior. As a condition of doing business, most MNCs require suppliers to meet globally recognized standards in areas including environmental sustainability, working conditions, and human rights (McBarnet, 2007) and many employ supply chain auditors to monitor adherence to these standards (Montiel, Husted, and Christmann, 2012). The TCE literature has long theorized that monitoring is a key governance mechanism for reducing transaction costs resulting from business partners' opportunistic exploitation of information asymmetries (Eisenhardt, 1985; Heide, Kumar, and Wathne, 2014). Studies have found that stringent monitoring is particularly important when opportunism by one party threatens to impose reputational spillover costs on the other (Mayer, Nickerson, and Owan, 2004). In theory, monitoring constrains opportunism and mitigates spillover costs by reducing information asymmetry (Heide, Wathne, and Rokkan, 2007). The theory assumes, however, that the information firms obtain from their monitors is accurate and complete.

This may not always be the case. First, just as bounded rationality constrains transacting parties' ability to foresee and plan for contingencies that might arise over the course of a business relationship, it is also likely to constrain monitors' ability to identify and communicate information about supply chain conditions. Second, many firms that have outsourced production to global supply chain partners have likewise outsourced the monitoring of those transactions to private, third-party social auditors. This form of trilateral governance (Williamson, 1979) can introduce agency problems into monitoring structures because third-party monitors' incentives may not always be aligned with the buyer-firm's (Khalil and Lawarrée, 2006). Indeed, research has demonstrated that private, third-party monitors are more lax in enforcing the rules imposed by their principal when a stringent approach could undermine their own opportunities for profits

(Montiel, Husted, and Christmann, 2012; Pierce and Toffel, 2013). Consequently, firms that have outsourced the governance of their outsourced transactions must consider ways to effectively monitor their monitors.

Despite monitoring's central role in reducing transaction costs, TCE and supply chain standards research shed little light on how it works in practice and what factors contribute to the generation of reliable information (Mayer, Nickerson, and Owan, 2004). TCE studies of monitoring have tended to focus on "ex ante safeguards to deter ex post opportunism" (Williamson, 2008), including contractual provisions (e.g., Argyres, Bercovitz, and Mayer, 2007; Barthélemy and Quélin, 2006), technological capabilities (Mayer and Salomon, 2006), and a shared knowledge base (Heide, Kumar, and Wathne, 2014) that might facilitate monitoring. Only a few studies investigate how this governance structure is put into practice and, to our knowledge, none addresses factors associated with the reliability of information obtained through monitoring. Mayer, Nickerson, and Owan (2004), for instance, find firms more likely to inspect suppliers' plants, production processes, and physical output when there is a substantial risk of reputational spillover. Handley and Gray (2013) establish through survey data that suppliers subjected to more frequent quality monitoring are more likely to perceive that the buyer has expectations of high quality.

The most extensive analysis of private supply chain standards has been in the organizational theory and operations literatures, which document how these standards are developed (Wood, 2004), why they are adopted (e.g., Delmas and Toffel, 2008; Short and Toffel, 2008; Terlaak and King, 2006), and their financial, operational, and compliance outcomes (e.g., Esbenshade, 2004; King and Lenox, 2001; Kocer and Fransen, 2009; Levine and Toffel, 2010; Locke, Rissing, and Pal, 2013; Potoski and Prakash, 2005; Rodríguez-Garavito,

2005; Short and Toffel, 2010; Terlaak and King, 2006; Toffel and Short, 2011). This extensive body of research tacitly assumes a pivotal role for private auditors but provides little insight into how they play that role (Heras-Saizarbitoria and Boiral, 2013).

A few empirical studies have investigated influences on private-sector auditor performance but have focused almost exclusively on economic conflicts of interest. For example, research finds auditors more lax when monitoring their own paying clients (e.g., Duflo et al., 2013; Jiang, Stanford, and Xie, 2012; Kinney, Jr., Palmrose, and Scholz, 2004), facing more competition (Bennett et al., 2013), enjoying lucrative cross-selling opportunities (Pierce and Toffel, 2013), or operating in corrupt environments in which they are more likely to receive side payments from audited firms (Montiel, Husted, and Christmann, 2012). Based on such findings, the literature has assumed that profit is the private auditor's dominant, if not exclusive, motive (Bazerman, Morgan, and Loewenstein, 1997; Moore et al., 2006; Partnoy, 2006).

While it is crucial to understand how conflicts of interest affect the quality of information generated through monitoring, our study seeks to move beyond economic incentives to investigate how social institutions and relationships shape and constrain the performance of monitoring functions. These influences are well established in related literatures, but they have yet to inform understandings of monitoring as a governance structure supporting outsourced production. TCE's foundational assumption is that transacting parties are constrained by bounded rationality (Williamson, 1979), but it has failed to consider how bounded rationality likewise constrains those who do the monitoring. Research on public regulatory implementation suggests that government monitors are constrained by bounded rationality. For instance, studies document significant heterogeneity in the way government inspectors apply the rules they are charged with enforcing (Feinstein, 1989; Hawkins, 1984; Lemley and Sampat, 2012; Macher,

Mayo, and Nickerson, 2011) based on a variety of social factors (Lipsky, 1980/2010; Piore, 2005; Schrank, 2009). Experimental studies in social psychology similarly reveal the influence of cognitive biases on the performance of financial auditors (e.g., Asare, Trompeter, and Wright, 2000; Tetlock, 1983). But these insights have not been tested in the context of private supply chain monitoring. We draw on these literatures to better understand how firms can structure governance arrangements to maximize the reliability of the strategic information they receive about their suppliers through monitoring.

HYPOTHESES

Ongoing auditor-supplier relationships

The primary function of transactional governance structures is to "economiz[e] on bounded rationality while simultaneously safeguarding the transactions in question against the hazards of opportunism" (Williamson, 1979: 245-6). However, the implementation of governance structures is itself constrained by bounded rationality and thus subject to opportunism. Many have theorized that monitors who repeatedly inspect a firm are likely to be shaped by cognitive biases and social pressures that will influence the violations they detect and cite. Bounded rationality limits the number of issues an auditor can pursue during any given audit (Jones, 2001; Simon, 1947). As Chugh and Bazerman (2007: 3) have argued, "bounded awareness" causes individuals to "overfocus on some information and fail to use other easily available information." Specifically, people tend to focus on information that comports with the tacit knowledge they have gained through experience. Though tacit knowledge can be a useful resource for decision makers, "dependence on tacit knowledge can create bounds on their awareness" (Kumar and Chakrabarti, 2012: 940) that limit their ability to perceive new issues.

These cognitive constraints are likely to be reinforced by social pressures and

opportunism. Returning auditors may develop "cozy relationships" (Moore et al., 2006: 24) with an audited firm's management that leads them to identify with and support its positions. In some circumstances, these relationships may go from cozy to corrupt if familiarity between auditors and management emboldens managers to pressure or even bribe auditors to report good results (Khalil and Lawarrée, 2006; Montiel, Husted, and Christmann, 2012).

Empirical research has found that managers' awareness is bounded by experience. "Managers use already established knowledge to determine what they see, and they use what they already know to choose what to look for in their environment" (von Krogh, Roos, and Slocum, 1994: 58); such "perceptual and cognitive limitations" lead to errors (Huber and Power, 1985: 172). Empirical research has found that ongoing relationships between government inspectors and inspected entities encourage a "benefit of the doubt" style of enforcement rather than an arms-length "policing" style (Bardach and Kagan, 1982/2002), resulting in milder penalties (Muehlenbachs, Staubli, and Cohen, 2013). We argue that private supply chain auditors will be subject to similar social pressures and cognitive constraints. If they repeatedly inspect the same supplier, they are more likely to focus on the domains they highlighted previously and to align their perspective with that of management, whereas a new audit team would bring a fresh set of eyes and focus on different issues, likely uncovering new violations.

> Hypothesis 1 (H1): An audit will yield fewer violations when conducted by an audit team that includes a member of the supplier's previous audit team.

Auditor tenure

Rationality can be bounded not only by cognitive constraints, but also by social structures, identities, and socialization (March and Olsen, 1998; Simon, 1947). Auditors' tenure on the job is associated with their level of professional knowledge, their place in the audit firm's organizational hierarchy, and their professional self-concept. Scholars and activists have argued

that more-experienced supply chain auditors are more effective (Esbenshade, 2004; Locke, Qin, and Brause, 2007). It is not clear, however, how experience affects the number of violations cited in a given audit. On the one hand, experience enhances auditors' practical knowledge and thus their ability to identify violations, as has been documented in qualitative studies of government inspectors (Bardach and Kagan, 1982/2002). Our interviews with managers of social auditors indicate that experience acquaints auditors with "tricks of the trade" such as how to detect that a supplier uses child labor even if child workers are not present during the audit.

On the other hand, these initial marginal detection gains from experience tend to diminish over time and it is not clear that more-experienced auditors will cite more violations. Scholarship on government regulatory agencies has suggested that new inspectors tend to exhibit "a more policing, nit-picking attitude" than more seasoned inspectors (Bardach and Kagan, 1982/2002: 129). Inexperienced inspectors "know too little about the industries and operations they are inspecting" and thus "lack the confidence to evaluate actual levels of risk" posed by particular violations, so they tend to go by the book and cite everything (Bardach and Kagan, 1982/2002: 129). Experienced inspectors, by contrast, may decline to cite violations lacking the requisite level of risk and culpability as they gain more confidence in their professional judgment (Bardach and Kagan, 1982/2002; Hawkins, 1984). We therefore expect that violation counts will initially rise with auditor tenure, as auditors gain the experience to detect violations, but that this effect will be tempered as the benefits of experience attenuate and as experienced auditors gain the confidence to exercise more discretion about which violations to cite.

> Hypothesis 2 (H2): Audits conducted by more experienced auditor teams will yield more violations but at a decreasing rate.

Professionalization

Education and training are important sources of professional socialization that should

impart to monitors both the skills to detect more violations and the sense of professional obligation to report violations to their principal (March and Olsen, 1998). Sociologists have long theorized that professionalization—specialized education and training in a field's skills and values—is a key constraint on individual discretion in both corporate and government bureaucracies (Abbott, 1988; Scott, 1966). Lipsky (1980/2010: 201), for instance, has argued that enhanced professionalism rationalizes the way front-line workers in government bureaucracies exercise discretion: "[S]treet-level bureaucrats should be professionals whose relatively altruistic behavior, high standards, and self-monitoring substitute for what the society cannot dictate. Who will watch the watchmen? The watchmen will watch themselves." Scholars have also suggested that professionalism can help internal corporate compliance monitors at for-profit firms resist the influence of economic pressures and perform their oversight functions more effectively (Parker, 1999). Research has demonstrated that professionalization can improve the efficacy of government labor inspectors (Piore, 2005; Schrank, 2009). We therefore expect that teams whose auditors are more professionalized will record more violations.

> Hypothesis 3 (H3): Audits conducted by teams that include auditors who are more professionalized will yield more violations.

Gender

Research has suggested that, even when constrained by bureaucratic rules and roles, men and women may perform their work "somewhat differently" (Eagly and Johannesen-Schmindt, 2001: 783). Several gender-based behavioral distinctions documented in the literature can influence whether social auditors discover—and also whether they cite—violations. Research has shown that women are more persistent at pursuing assigned tasks (Spence and Buckner, 2000; Stonewater, Eveslage, and Dingerson, 1990), potentially motivating them to search more diligently for violations. Research has also found that women have perceptual and integrative

processing advantages that may enhance their ability to detect violations. For example, women have been found to be more skilled at interpreting the emotional content of others' expressions (Killgore and Cupp, 2002; Thayer and Johnsen, 2000) and to be "more sensitive to subtle stimulus" (Darley and Smith, 1995: 43). Research has also found that women tend to use a more comprehensive information-processing style, whereby they "attempt to assimilate all available cues" (Darley and Smith, 1995: 43). According to Gold, Hunton, and Gomaa (2009: 3):

> [W]omen tend to integrate more of the available evidential cues into their judgments, reflecting an intense level of cognitive processing. Men, on the other hand, tend to eliminate what they deem to be irrelevant cues and focus on a limited set of salient pieces of information that are relatively easy and quick to process.

Thus, women's style of gathering and processing information may better equip them to perceive violations in a complex factory setting and to elicit information about violations from employees.

Moreover, research suggests that women are more likely to cite the violations they perceive. Women in bureaucratic organizations are more likely than men to be strict rule-followers (Oberfield, 2010; Portillo, 2012; Portillo and DeHart-Davis, 2009). A long line of sociological scholarship has argued generally that "rules are a means of asserting power for the less powerful" (Portillo, 2012: 91) and that low-status members of organizations use rules as a source of authority to compensate for their lack of personal authority (Green and Melnick, 1950; Thompson, 1977). We know of no research on women's status in supply chain auditing, but research on financial auditors and audit firms suggests that, even as many women have entered that profession, masculine organizational cultures still tend to devalue women's contributions (Haynes, 2012; Jonnergård, Stafsudd, and Elg, 2010). Empirical studies of government workers find that women do indeed "go by the book" (Green and Melnick, 1950; Portillo, 2012; Portillo and DeHart-Davis, 2009) more strictly than their male colleagues do. This evidence suggests that gender will significantly influence whether supply chain auditors detect and cite violations.

Hypothesis 4 (H4): Audits conducted by all-female teams will yield more violations than those conducted by all-male teams.

Gender diversity

Supply chain auditing teams are not necessarily all-male or all-female. In the organizational literature on teams, there is significant debate about the effects of diversity, including gender diversity, on team performance (Joshi and Roh, 2009; Phillips et al., 2012). We expect that gender diversity will enhance a supply chain auditing team's performance because of complementary perceptual styles and interpersonal dynamics.

First, women's and men's different perceptual styles may cause them to identify different types of violation, enabling mixed-gender teams to find more. This should be particularly valuable in eliciting information from a diverse set of employees and managers. Research has demonstrated that "diversity in groups increases the likelihood that there will be access to different information in a group" (Phillips et al., 2012: 161). Our interviews with social auditors indicate that audited factories tend to have mainly female workers and male managers and that the female workers are more likely to communicate openly with female auditors, while, as one interviewee put it, male supplier managers, "for cultural reasons, may find it difficult…to open up to women."

Second, research has shown how the interpersonal dynamics of gender diversity can improve team performance. For instance, studies find that people on socially diverse teams tend to prepare more thoroughly and to think through a broader range of issues (Loyd et al., 2013). Fenwick and Neal report the superior performance of gender-diverse teams in management-simulation exercises, crediting it to the "mix of male and female operating, decision-making and leadership styles" (2001: 217). Furthermore, men on mixed teams may work harder if they sense they are being outperformed by women. Studies have shown that lower-performing team

members often compare themselves to better performers and that this motivates them to improve their performance to meet or exceed that of the stronger performers (Lount, Jr. and Phillips, 2007; Weber, Wittchen, and Hertel, 2009). Weber, Wittchen, and Hertel (2009) demonstrate that men are particularly prone to such competitive behavior. Male auditors may therefore feel compelled to match or beat their female teammates' higher citation rates.

Although some evidence suggests that gender diversity can sometimes undermine team performance (Phillips et al., 2012), a recent meta-study found that gender diversity is particularly likely to enhance performance in service industries, where team members interact directly with clients (Joshi and Roh, 2009). Because supply chain auditing is a service industry and auditors interact extensively with those they audit, we expect gender diversity to improve team performance.

> Hypothesis 5 (H5): Audits conducted by gender-diverse teams will yield more violations than those conducted by single-gender teams.

DATA AND MEASURES

Empirical context and sample

To test our hypotheses, we obtained data for thousands of code-of-conduct audits conducted in 66 countries between 2004 and 2009 by one of the world's largest social auditing companies.[1] During that period, the company, which already had more than a decade's experience, employed several hundred people in many countries; they spoke over 30 languages.

The dataset contains audit results for and information about each audited supplier, including its country and a unique identifier; characteristics and unique identifiers for the auditors on each audit; and the country of the multinational firm on whose behalf each audit was conducted and a unique identifier for that firm. Our estimations are based on the 16,795 audits of

[1] The company required anonymity as a condition of sharing its data with us.

5,819 factories (in 66 countries) for which we had data on all the measures described below and which had been audited at least twice during the sample period (a technical requirement owing to our models being estimated with supplier-level fixed effects, described below). The industry composition of our sample is reported in Table 1; the most common industries are garments, accessories, electronics, and toys.[2] In our dataset, the brands nearly always determined which suppliers would be audited.[3]

[Insert Table 1 about here]

Dependent variable

We measure the extent to which factories adhere to codes of conduct as the number of violations in each audit,[4] obtained from the social auditing firm's database. We include only the types of violation that, according to the social auditing firm (hereafter referred to as "the auditing firm"), apply in all industries and are interpreted by auditors in the same way in all countries; namely, violations of rules for child labor, forced or compulsory labor, working hours, occupational health and safety, minimum wage, treatment of foreign workers and subcontractors, and disciplinary practices.[5] During an audit, the auditors code a common set of dichotomous indicators (violation or no violation) in each category.[6]

[2] The geographic distribution of audited establishments and audits are reported in Table B1 of Appendix 2.
[3] Factories sometimes sought audits to become certified to a third-party standard such as SA8000. As described later, our results are robust to omitting the very small proportion of audits that used third-party protocols.
[4] Studies of compliance with government health and safety regulations have long used violation counts recorded by inspectors as a measure of compliance variation (Braithwaite and Makkai, 1991; Gray and Shadbegian, 2005) and more recent studies of supplier compliance with private labor standards have used violation data recorded by private auditors (Ang et al., 2012; Oka, 2010).
[5] We exclude other categories that, according to our auditor interviews, are applied only to certain factories or are interpreted differently in different countries: the right of association, the right to organize and bargain collectively, legal client regulation, dormitory conditions, and canteen violations.
[6] The occupational health and safety category, for example, consists of seven indicators pertinent to emergency preparedness (blocked or locked aisles or exits, inadequate first-aid supplies, insufficient emergency exits, lack of emergency lighting, lack of employee emergency training, lack of an evacuation plan, and unmarked aisles), five

Independent variables

To identify the potential for auditors' relationships with audited suppliers to influence their behavior, we coded previous auditor as 1 when at least one member of the focal audit team had participated in one of the supplier's previous audits during the sample period and 0 otherwise.

We measure an auditor's experience as his or her years of service at the auditing firm based on data from the auditing firm's database. We calculated maximum tenure as the highest number of years that any member of the audit team had worked at the company.[7]

We measure the professionalism of the audit team in two ways. Because one important source of professionalization is "standardized formal training in universities" (Lipsky, 1980/2010: 201), we code graduate education as 1 when at least one member of the audit team had a graduate degree and 0 otherwise. We focused on graduate education because nearly all auditors in our dataset had a bachelor's degree.[8] We also created auditing skills training as the highest number of the auditing firm's training courses that any audit team member had completed. These courses teach skills such as how to interpret national labor laws and how to detect payroll manipulation that might indicate wage violations.[9]

We measure gender composition with three dummy variables—all-female audit team, all-male audit team, and mixed-gender audit team.[10]

---

indicators of fire safety, eight related to toilets, and eight related to the work floor.

[7] Using average tenure rather than the maximum tenure yielded nearly identical results.

[8] We coded graduate education as a dichotomous variable rather than a continuous measure to better reflect the near-binary distribution in our sample: 87 percent of the audit teams had no members with a master's degree, 7 percent had all members with a master's degree, and a mere 6 percent had an intermediate configuration.

[9] Using the average rather than the maximum number of training courses yielded nearly identical results.

[10] We use these dummies rather than a continuous measure such as proportion female because the database indicated that 97 percent of the audit teams in our sample were all-female, all-male, or evenly divided. Thus, the three dummies represent the distribution of our data.

Control variables

Using the auditing firm's database, we calculated the proportion of each team that had undergone certification training—training on the standards and protocols of a particular certification regime, such as SA8000—because the firm indicated that such training influences the scope of the audit and the types of violation auditors look for. We also calculated the proportion of each team that had undergone brand training—training provided by the multinational firm on its corporate responsibility program and procedures—to account for possible variations in stringency requested by different brands.

We created a proxy for each audit team's average age based on coarsened auditor age data provided by the auditing firm. To keep precise ages confidential, the firm provided five-year age-range categories (for example, 20–24 years old) for each auditor. We calculated the midpoint for each category and then created average age as the average of the oldest and youngest age-range categories on a team.[11]

We created a dummy variable to indicate whether an audit was conducted according to a third-party protocol—such as that of the Business Social Compliance Initiative (BSCI), the Initiative Clause Sociale (ICS), the Sedex Members Ethical Trade Audit (SMETA), the International Council of Toy Industries (ICTI), or Worldwide Responsible Accredited Production (WRAP).

We measure whether an audit is unannounced or pre-announced, using a dummy variable, unannounced audit, coded 1 for an unannounced audit and 0 for a pre-announced audit.

To indicate which entity paid for each audit,[12] we created two dichotomous variables

[11] Using the oldest team member's age rather than the team's average age yielded nearly identical results.
[12] In our dataset, multinational firms nearly always determined whether they or the supplier (or its agents) paid for an audit. Our interviews indicated that this decision was not driven by the supplier's managerial attitude, violation rate, or improvement rate. Factories sometimes sought and paid for audits when they sought to become certified to a

based on the auditing firm's database. Audit paid for by supplier or agent identifies audits with the potential for financial conflict of interest. It is coded 1 for audits paid for by the audited supplier or by agents, vendors, or licensees and coded 0 for audits paid for by the multinational firm.[13] Audit paid for by the multinational firm is coded in the opposite manner.

We include dummy variables to control for the number of auditors on each audit (two through five, with one as the omitted category).

Based on the auditor's database, we created a dummy variable to distinguish routine audits from re-audits, which tend to have a narrower focus on those domains where violations were previously identified. We created dummies to indicate a supplier's audit sequence—its second audit, third audit, and so on through sixth-or-higher audit (because only five percent of the audits in our sample were the seventh or higher), with a supplier's first audit as the omitted category.[14]

We measure a supplier country's average economic development in the year the audit was conducted as its annual per-capita gross domestic product (GDP) in 2005 dollars, calculated by the U.S. Department of Agriculture's Economic Research Service (obtained from http://www.ers.usda.gov). To reduce skew, we use the log. To measure the extent to which the government of the supplier's country fosters a regulatory environment promoting economic development, we use the annual regulatory quality metric corresponding to the year the audit was conducted, calculated by the World Bank's Worldwide Governance Indicators project

---

third-party standard such as SA8000. As described later, our results are robust to omitting from the estimation sample the very small proportion of audits that used third-party protocols.

[13] We combined these categories of payer because prior research and our auditor interviews suggest that, in our empirical context, the financial incentives of factories and these intermediaries are closely aligned. In developing economies, intermediaries' role is to promote exports by domestic manufacturers by identifying new markets for their goods and services (Ellis, 2011) and by reducing transaction-cost barriers to export (Ahn, Khandelwal, and Wei, 2011). Our results are robust to an alternative specification in which we include two dummies that control separately for audits paid by factories and for audits paid by agents, vendors, or licensees.

[14] Using an audit sequence counter variable and its square rather than the dummies yielded nearly identical results.

(obtained from http://data.worldbank.org/data-catalog/worldwide-governance-indicators) to capture "perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (World Bank, 2013).[15]

We measure the extent of press freedom in the supplier's country the year the audit took place via the annual Press Freedom Index produced by Reporters without Borders (obtained from http://en.rsf.org). This index incorporates the extent to which journalists face direct and indirect threats—including imprisonment, physical attacks, censorship, and self-censorship—and the number of journalists detained, murdered, physically attacked, or threatened. We create annual press freedom by reverse-coding the Press Freedom Index, so that a higher score represents more press freedom, and then rescaling the result to range from 0 to 1.

Summary statistics are reported in Table 2.[16]

[Insert Table 2 about here]

EMPIRICAL MODEL AND RESULTS

Our empirical model includes all independent and control variables described above and three sets of fixed effects. Specifically, we estimate the following model:

$$Y_{icdj} = F (\beta_1 \mathbf{X}_{id} + \beta_2 \boldsymbol{\phi}_{id} + \beta_3 \boldsymbol{\lambda}_{cd} + \beta_4 \boldsymbol{\alpha}_i + \beta_5 \boldsymbol{\delta}_t + \beta_6 \boldsymbol{\gamma}_j + \varepsilon_{icdj}),$$

where Y_{icdj} refers to the number of violations recorded in the audit of supplier i in country c that was conducted on date d on behalf of a multinational firm in country j. F (·) refers to the Poisson function. $\mathbf{X}_{id}$ refers to our hypothesized variables (previous auditor, maximum tenure, average tenure, graduate education, auditing skills training, all-male audit team, all-female audit team, mixed-gender audit team).

[15] Controlling instead for supplier countries' annual Corruption Perceptions Index scores from Transparency International, which are highly correlated with the World Bank's regulatory quality metric (ρ=0.96), yields nearly identical results.

[16] Correlations are reported in Table B2 in Appendix 2.

ϕ_{1d} refers to the audit-level control variables described above. We control for certification training and brand training because these types of training might influence an audit team's ability to detect and report violations or the nature of the violations it detects and reports and because prior research has indicated that training can influence the stringency of government monitors (Macher, Mayo, and Nickerson, 2011). We control for audit teams' average age and its square to ensure that the effects of auditor tenure can be attributed to job experience rather than to the life-cycle effects posited by human capital theory (Diamond, Jr., 1984), which predicts "an inverse U-shaped relationship between productivity and age" (Teitelbaum, 2006: 166). We control for whether an audit was conducted according to a third-party protocol because such protocols might limit an auditor's discretion. We control for whether an audit was an unannounced audit or an announced audit because the latter provides several weeks of notice that might enable the supplier to remedy problems before the audit, which could result in fewer violations once the auditors arrive. We include controls for which entity paid for the audit (audit paid for by supplier or agent and audit paid for by multinational firm) because research has indicated that financial conflicts of interest created by audit fees undermine auditors' and inspectors' stringency (Duflo et al., 2013; Moore et al., 2006; Partnoy, 2006). We also control for whether an audit is a re-audit because those tend to focus on the domains where violations were previously identified and therefore can yield fewer violations than routine audits. We include dummies to control for the number of auditors because larger audit teams are assigned to larger and more complex establishments and because prior research has shown that larger teams of government inspectors can lead to more stringent monitoring (Muehlenbachs, Staubli, and Cohen, 2013). We include dummies indicating the supplier's audit sequence to control for the possibility that successive audits yield fewer violations as factories address the issues exposed.

λ_{cd} refers to the annual supplier-country control variables described above: per-capita GDP (log), regulatory quality, and press freedom. These country-level governmental, economic, and civil-society attributes control for institutional factors that can influence a supplier's compliance with codes of conduct (Toffel, Short, and Ouellet, 2015). γ_j refers to fixed effects for the headquarters country of the MNC on whose behalf each audit was conducted. This controls for the possibility that consumers and activist groups in different countries vary in their concern for and attentiveness to supply chain conditions, which might in turn affect how much pressure firms headquartered in those countries exert on their supply chain auditors to audit stringently (Toffel, Short, and Ouellet, 2015). These fixed effects also control for all other time-invariant differences between the headquarters countries' institutional contexts.

We include fixed effects for each supplier (α_i) to control for time-invariant characteristics that might affect its violation rate, such as size, age, industry, and national institutional context.[17] Dummies for the audit year (δ_t) control for overall temporal trends.

Our identification strategy is based on the fact that the process of assigning auditors to audit teams is unrelated to our independent variables and thus is not a source of endogeneity that should bias their coefficients. Specifically, our interviews with the auditing firm indicated that assignments were based on (1) language skills to communicate with management and workers, (2) availability, and (3) the need for at least one team member to qualify as a lead auditor.[18]

Results

We estimate the model using Poisson regression with robust standard errors and report

[17] Because supplier-level fixed effects in our model absorb the time-invariant portion of supplier-country-level variables, per-capita GDP, regulatory quality, and press freedom effectively control for within-country temporal variation in their effect on supplier violation rates.

[18] Potential concerns that endogenous audit assignment might bias results led us to conduct several supplemental analyses described below and in Appendix 1.

our results in Column 1 of Table 3. Negative binomial regression with conditional fixed effects yields nearly identical results, indicating that our results are not sensitive to estimation technique. Variance inflation factors (VIF) were below 2 for all hypothesized variables and below 5 for all variables except a few buyer-country dummies, which yields no evidence that multicollinearity is a serious concern. The explanatory power of the model is indicated by a McFadden's R-squared value of 0.39 and a McFadden's adjusted R-squared value of 0.30.

[Insert Table 3 about here]

The significant negative coefficient on previous auditor (β= -0.04; p = 0.03; IRR = 0.96) indicates that audits yield 4 percent fewer violations when a team member had participated in a prior audit of the same supplier, which supports Hypothesis 1. The average marginal effect (AME) of -0.3 indicates that, compared to the sample average of 6.5 violations, an audit by a team with a previous auditor would yield 6.2 violations.

The audit team's maximum tenure has a significant positive coefficient (β = 0.07; p < 0.01) and its square term has a significant negative coefficient (β = -0.004; p < 0.01), implying that the number of violations cited increases as tenure increases but at a diminishing rate, which supports Hypothesis 2.[19]

Our results are mixed with respect to professionalization. The coefficient on graduate education is positive as predicted but not significant, yielding no evidence that audits conducted by teams with more formal education yielded significantly more violations. Audits did yield significantly more violations when conducted by more professionalized auditors as measured by auditor training (β = 0.02; p < 0.01; IRR = 1.02). This result is not driven by age or tenure, for which we control. The AME indicates that each additional training course (beyond that

[19] This relationship is illustrated in Figure 1 in Appendix 2, which graphs average predicted violations at varying levels of the audit team's maximum experience.

possessed by the team's most highly trained member) is associated with an additional 0.14 violations. In other words, an audit team whose most highly trained member had taken nine training courses would, on average, cite one more violation than a team whose most highly trained member had taken two training courses. Jointly, these results yield some support for Hypothesis 3, but only when professionalization is measured by specific training rather than by broader education.

Team gender composition is also significantly associated with the number of violations reported. Audits by all-female teams yield 6 percent more violations than those by all-male teams (the baseline) ($\beta = 0.05$; $p < 0.01$; IRR = 1.05), which supports Hypothesis 4. The average marginal effect indicates that audits by all-female teams yield 0.35 more violations than those by all-male teams (the baseline category).

Mixed-gender teams yield on average 7 percent more violations—or nearly half a violation more—than all-male teams (the baseline) ($\beta = 0.07$; $p < 0.01$; IRR = 1.07) and slightly more violations than all-female teams (Δ AME = 0.1), but the latter difference is not statistically distinguishable ($x^2 = 0.55$; $p = 0.46$). These results partially support Hypothesis 5.

The coefficients on second inspection through sixth or more inspection are negative and significant. Wald tests comparing these coefficients indicate that, on average, each successive audit yields significantly fewer violations. AMEs indicate that, on average, a supplier's second audit yields nearly one fewer violation than its initial audit during our sample period ($\beta = -0.15$; $p < 0.01$; AME = -0.9), its third audit yields nearly 1.3 fewer than its second audit (AME = -2.2, a statistically significant decline: Wald $x^2 = 114$; $p < 0.01$), and its fourth audit yields 0.6 fewer than its third audit (AME = -2.8, a statistically significant decline: Wald $x^2 = 20$; $p < 0.01$).[20]

[20] This relationship is also apparent in the summary statistics depicted in Figure 2 in Appendix 2.

Consistent with assigning more auditors to larger factories, which are likely to generate more violations, we find that audits with more auditors yield significantly more violations. We find no evidence that the number of violations varied with the team's certification training, brand training, or average age or with a third-party protocol. Our point estimate indicates that unannounced audits yielded slightly more violations than announced audits at a given supplier (AME = 0.2), but the difference was outside conventional significance levels (p = 0.15).

Audits paid for by factories or agents yielded 8 percent fewer violations than audits paid for by the multinational firm, the baseline category (β= -0.08; p < 0.01; IRR = 0.92). The average marginal effect indicates that, on average, audits yield 0.6 fewer violations when the supplier or agent pays than when the multinational firm pays, a drop from 6.5 to 5.9.

Audits yielded fewer violations in countries with greater per capita GDP (β= -0.62; p = 0.02; AME = -4.0) and in those with greater press freedom (β = -0.51; p = 0.02; AME = 3.3). Our point estimate indicates fewer violations at factories in countries with higher regulatory quality, but the relationship was not statistically significant (β = -0.18; p = 0.22).

Robustness tests

Potential concerns that endogenous audit assignment—and, in particular, differences between lead auditors and other auditors—might bias our results led us to conduct several supplemental analyses. As described in Appendix 1, instrumenting for the audit team's maximum audit skills training and maximum tenure—using average values of these characteristics among all auditors based in the auditing firm's field office that staffed each establishment's audits—yielded results statistically indistinguishable from our primary results (Hausman test x^2 = 52.09; p = 0.16), thus offering no evidence of endogeneity bias.

Estimating our primary model using negative binomial regression yielded results nearly

identical to those of our primary approach, which used Poisson regression. We also estimated our primary model on various subsamples to assess the extent to which our results were driven by certain types of audits. Column 2 of Table 3 reports estimates after excluding the 210 audits performed for multinational firms whose audit teams were always all-female, in case that pattern reflected a client policy that might bias our results. Column 3 reports estimates based on the 10,648 audits conducted by teams of at least two to ensure that our results were not driven by single-auditor audits. Column 4 reports estimates after excluding the 751 audits conducted according to third-party protocols, in case the influence of such protocols on the discovery or reporting of violations is not adequately controlled for with the dummy variable used in our main specification and also because, in these cases, the factories themselves might have chosen the protocol and auditor. Column 5 reports results for the subsample of 9,266 audits that excludes each supplier's first audit in our sample; some of those might have been pre-assessments of factories that multinational firms had not yet engaged and our hypothesized relationships might operate differently in such cases. Our results are quite robust across these subsamples. The sign and magnitude of all hypothesized variable coefficients are very similar to those in our main results.

DISCUSSION

Our research indicates that supply chain auditors' identification and reporting of violations of supplier codes of conduct are shaped not only by the financial conflicts of interest that have been the focus of research to date, but also by social factors that include the auditors' experience, professional training, and gender; the gender diversity of their teams; and their repeated interactions with those whom they audit. These findings contribute to the TCE stream within the strategic management literature and to the transnational business regulation literature.

Our results also suggest strategies for designing private monitoring regimes to provide companies with more reliable strategic information about their supply chain partners.

Contributions to the strategic management literature

While the TCE literature highlights the important governance function of monitoring, it contains little empirical research on monitoring and has not addressed monitoring's distinct role in managing reputational risk in global supply chains. Our study significantly extends the TCE literature on monitoring to address this key strategic concern. First, we highlight the particular importance of supply chain monitoring to mitigate the risk of reputational spillovers. The TCE literature on global outsourcing has largely assumed that the transaction costs of outsourced production are dwarfed by its production economies and, moreover, are becoming vanishingly small with advances in digital communication that have radically reduced information, bargaining, and monitoring costs (e.g., Levy, 2008). We argue that this perspective obscures the potentially large reputational spillover costs of outsourcing to suppliers with poor social or environmental practices, and our findings suggest that outsourcing firms must carefully consider whether their monitoring arrangements are well designed to effectively manage these costs and at what point the costs of effective monitoring become sufficiently large to undercut the economic gains of outsourcing production. These insights bridge the TCE literature with strategic management perspectives on reputation (Roberts and Dowling, 2002).

Second, we extend the existing literature's focus on the ex ante design of monitoring structures to highlight the need for effective ongoing ex post monitoring to safeguard against opportunism in outsourcing relationships. TCE studies of monitoring have tended to focus on "ex ante safeguards to deter ex post opportunism" (Williamson, 2008), such as the appropriate design of contractual provisions (Argyres, Bercovitz, and Mayer, 2007; Barthélemy and Quélin,

2006; Gereffi, Humphrey, and Sturgeon, 2005). Our empirical documentation of heterogeneity in the reliability of information generated by monitors makes it clear that for monitoring to mitigate the transaction costs of reputational spillovers, it must be not only properly designed, but also effectively implemented.

Third, we extend TCE's foundational concern with the bounded rationality of contracting parties (Williamson, 1979) to third parties—those who support outsourced transactions—by demonstrating the ways in which these actors are likewise constrained by social, cognitive, and relational factors. Research addressing the limitations of monitors has, to date, focused on their opportunistic behavior (Khalil and Lawarrée, 2006) rather than on more generic constraints on their rationality. More generally, the literature tends to assume that monitoring is becoming increasingly effective because of advances in "technology, standardization of business processes, and plunging communication costs" (Geis 2007: 998), but this perspective fails to acknowledge that individuals engaged in monitoring activities remain subject to the limits of bounded rationality. Our research identifies this important oversight and suggests ways that managers can economize not only on their own bounded rationality, but that of their monitors.

Finally, we identify important second-order monitoring problems that arise when firms outsource monitoring functions to third-parties. Existing TCE accounts tend to assume that monitoring is carried out by the transacting parties themselves. Increasingly, however, these functions are performed by private, third-party firms such as social auditors, certification organizations, assurance services, and consultants. This little-explored form of trilateral governance (Williamson, 1979) introduces potential agency problems, because third-party monitors often have different incentive structures than the principals that hire them (Khalil and Lawarrée, 2006; Pierce and Toffel. 2013). Our study highlights the need for greater attention to

these complex governance structures and our findings offer strategies firms can use to monitor their monitors and increase the reliability of the strategic information those monitors supply. These strategies, discussed below, are relatively cost-effective ways to economize on monitors' bounded rationality.

Contributions to the transnational business regulation literature

Supply chain auditing has become an important component of transnational business regulatory schemes that seek to address the social and environmental risks of global business activities (Braithwaite and Drahos, 2000; Toffel, Short, and Ouellet, 2015). Private labeling regimes such as the Forest Stewardship Council, the Marine Stewardship Council, and Fair Trade rely on private third-party auditors. International intergovernmental institutions such as the United Nations have encouraged supply chain auditing by requesting that MNCs conduct "due diligence" to ensure their suppliers' compliance with international human rights norms (Ruggie, 2008). Many national regulators have followed suit, requiring MNCs to conduct due diligence and disclose supply chain practices (Zandvliet, 2011). The efficacy and legitimacy of transnational business regulation largely depends on the credibility of private monitoring; our study responds to calls for more empirical research on the key actors (Büthe, 2010). While our findings of auditor heterogeneity support those who question the independence and objectivity of private monitors (Boiral and Gendron, 2011; Power, 1997), our identification of several systematic determinants of that heterogeneity suggests how companies and policymakers can improve audit validity. In addition, as governments begin to mandate certain ESG measures and sustainability disclosures that were once voluntary, our findings can help firms develop compliance strategies to mitigate emerging legal risks associated with supply chain monitoring.

Implications for managers

Our study has implications for companies that hire auditors to monitor their suppliers and for those auditing firms. Our findings reveal to both some key characteristics of audit teams that can enhance audit quality. More broadly, our findings can inform those who hire or manage other types of private gatekeepers, such as accounting firms and credit rating agencies—subjects of much interest since their failures to detect and reveal corporate wrongdoing led to corporate scandals and financial meltdowns in the early twenty-first century (Partnoy, 2006).[21]

Research suggests that managers tend to assume the professional independence and objectivity of their supply auditors (Dogui, Boiral, and Gendron, 2013). Our interviews with managers of companies that hire supply chain auditors indicate that these managers pay a great deal of attention when selecting audit firms, but then mainly leave it to the auditing firms to select the individual auditors who assess their suppliers. It may seem logical to "leave it to the experts," but our results show that audit report quality suffers when the corporate client overlooks the auditor assignment process. In particular, managers of companies that hire supply chain auditors should pay closer attention to auditor training and experience, the gender composition of teams, and auditor rotation. Our work also confirms prior research that questions the quality of audits paid for by the audited factory.

Moreover, our interviews with managers of several supply chain auditing firms indicate that they do not consider the key characteristics we identified when composing audit teams. Auditor assignments are based largely on logistical considerations like availability, language skills, minimum required training, and (in some cases) industry-specific experience. None of the managers we interviewed indicated that they considered gender. Few expressed concerns about

[21] The gatekeeper literature, like the auditing literature, has focused almost exclusively on the influence of economic conflicts of interest (Bazerman, Morgan, and Loewenstein, 1997; Moore et al., 2006; Partnoy, 2006).

re-assigning auditors to a supplier, though several remarked that doing so could expedite the audit (thereby reducing audit cost) by leveraging the auditors' familiarity with the facility and staff.

Considering these prevailing practices, our results equip managers of firms that hire auditors to monitor their suppliers and auditing firms to better understand how team characteristics can influence audit quality. Our interviews with several auditing firms indicate that clients have the ability to influence audit team composition, but only a small fraction of clients actually seek to do so. Greater consideration by clients to their auditing firms' team composition can heighten those firms' attention to assessing and improving audit quality. If clients face auditing markets in which their heightened interest in audit team composition is met with insurmountable resistance from auditing firms, clients should consider using their own employees to monitor suppliers in those markets to assure audit quality

Because we find that auditors tend to cite fewer violations at factories where they have ongoing relationships, client firms should consider requiring that their auditing firms regularly rotate the auditing staff to avoid this potential source of bias.[22] There are also clear managerial implications from our finding that audit teams whose members had more training documented significantly more violations than less-well-trained teams. Clients should insist that highly-trained auditors be assigned to their suppliers, while auditing firms truly dedicated to providing reliable audits—observable when different audit teams yield indistinguishable audit reports—should reassess their minimum training requirements.

Auditing firms and their clients should also mind the gender composition of audit teams.

[22] Others have advocated rotation of auditors (e.g., Moore et al., 2006; U.S. Public Company Accounting Oversight Board, 2011)—although such calls have focused on financial auditors—and rotation of audit firms rather than of individual auditors. A few schemes have explicitly stipulated term limits for auditing companies; for example, California's greenhouse gas regulation requires regulated entities to change verification companies every six years.

Our findings reveal that all-male teams yielded significantly fewer violations. Audit firms should examine how gender composition leads to such disparities so that they can enhance their training to better achieve the goal of audit teams yielding comprehensive results irrespective of gender composition. In the meantime, companies hiring supplier auditors should examine whether their audit results correlate with the gender composition of their audit teams and, if so, press those firms to understand why. This might lead clients to develop evidence-based policies for their third-party auditors to follow when assembling audit teams. If more clients seek to influence audit team composition to increase audit quality, auditing firms may begin to compete on their attention to—and ongoing assessment of—audit quality. Should such client demands face insurmountable resistance from auditing firms in some markets, clients using suppliers in those markets should consider relying on their own employees—rather than outsourcing—to monitor suppliers in those markets.

Limitations and future research

Given the nature of our large quantitative study, we are unable to identify the precise mechanisms by which the factors we identify influence individual auditor decisions. We encourage future research to investigate the social processes underlying these outcomes.

Discussions with social auditors at the firm that provided our data and at competing firms provoked no suspicion that endogeneity drives our results. Team assignments were driven largely by language skills, availability, and the team's need for a qualified lead auditor. Our discussions also indicated that MNCs determine which factories are audited, obviating the risk of a selection effect whereby better-than-average or worse-than-average factories choose to be audited or to pay for their own audits, as happens in some voluntary environmental programs (King and Toffel, 2009). Even so, we cannot rule out the possibility that omitted variables are

correlated with our independent variables and violation rates; we therefore encourage future randomized field experiments (e.g., Hainmueller, Hiscox, and Sequeira, forthcoming).

Our findings relating to gender and gender diversity may be influenced by the gender composition of the supplier's workforce. Although we do not have such demographic data, available meta-data and our own interviews with social auditors suggest that women dominate the workforce in the export-intensive industries—such as garments, textiles, and electronics—that account for most of our sample (Dejardin and Owens, 2009). Future research could explore how auditors' decisions are influenced by the interaction of the gender composition of the audit team and that of the audited organization.

Future research can also explore how auditors' decisions are influenced by various short- and long-term organizational structures and incentives. For instance, differing compensation systems may influence the extent to which supply chain auditors' decisions are shaped by economic incentives and other factors. Field experiments might show which technical and managerial training most improves auditors' objectivity. More broadly, it is important to investigate whether our findings are generalizable to other types of private gatekeeper, such as financial auditors, credit rating agencies, and attorneys. Do they respond similarly to economic incentives, professional obligations, and social pressures? Direct comparison of the practices of private-sector monitors such as social auditors and public-sector monitors such as government inspectors could reveal opportunities to enhance the efficiency and effectiveness of both. For example, whereas less stringency has been observed among more-experienced government inspectors (Lemley and Sampat, 2012; Macher, Mayo, and Nickerson, 2011), we observe greater stringency (albeit at a decreasing rate) among more-experienced private monitors. From the TCE perspective, it is important to investigate whether social monitoring actually mitigates

reputational transaction costs for outsourcing firms, either by improving the supplier's social practices or by providing firms with timely actionable information.

CONCLUSION

Although private supply chain auditors are increasingly important to strategic corporate outsourcing decisions and to public and private transnational business regulation, they have seldom attracted academic attention. Our investigation of supply chain auditing practices at thousands of factories around the world reveals several social factors that influence auditors' decisions. More broadly, our work contributes to the literatures on strategic management, private supply chain monitoring, and regulatory compliance mechanisms and highlights opportunities to improve the design and implementation of monitoring outsourced production.

REFERENCES

Abbott, A, 1988, The System of Professions: An Essay on the Division of Expert Labor. Chicago: University of Chicago Press.

Ahn, JaeBin, Amit K. Khandelwal, and Shang-Jin Wei, 2011, The role of intermediaries in facilitating trade. Journal of International Economics 84(1): 73-85.

Alcacer, J., and J. Oxley, 2014, Learning by supplying. Strategic Management Journal 35(2): 204–223.

Ang, D., D. Brown, R. Dehejia, and R. Robertson, 2012, Public disclosure, reputation sensitivity, and labor law compliance: Evidence from Better Factories Cambodia. Review of Development Economics 16(4): 594–607.

Argyres, N. S., J. Bercovitz, and K. J. Mayer, 2007, Complementarity and evolution of contractual provisions: An empirical study of IT services contracts. Organization Science 18(1): 3–19.

Asare, S. K., G. M. Trompeter, and A. M. Wright, 2000, The effect of accountability and time budgets on auditors' testing strategies. Contemporary Accounting Research 17(4): 539–560.

Bardach, E., and R. A. Kagan, 1982/2002, Going by the Book: The Problem of Regulatory Unreasonableness. New Brunswick, NJ: Transaction.

Barthélemy, J., and B. V. Quélin, 2006, Complexity of outsourcing contracts and ex post transaction costs: An empirical investigation. Journal of Management Studies 43(8): 1775–1797.

Bazerman, M. H., K. Morgan, and G. F. Loewenstein, 1997, The impossibility of auditor independence. MIT Sloan Management Review 38(4): 89–94.

Bennett, V. M., L. Pierce, J. A. Snyder, and M. W. Toffel, 2013, Customer-driven misconduct: How competition corrupts business practices. Management Science 59(8): 1725–1742.

Boiral, O., and Y. Gendron, 2011, Sustainable development and certification practices: Lessons learned and prospects. Business Strategy and the Environment 20(5): 331–347.

Braithwaite, J., and P. Drahos, 2000, Global Business Regulation. Cambridge, UK: Cambridge University Press.

Braithwaite, J., and T. Makkai, 1991, Testing an expected utility model of corporate deterrence. Law & Society Review 25(1): 7–40.

Büthe, T., 2010, Global private politics: A research agenda. Business and Politics 12(3): Article 12.

Card, D., 1995, Using geographic variation in college proximity to estimate the return to schooling. In L. N. Christofides, E. K. Grant, and R. Swidinsky (eds.), Aspects of Labor Market Behaviour: Essays in Honour of John Vanderkamp: 201–222. Toronto: University of Toronto Press.

Chugh, D., and M. H. Bazerman, 2007, Bounded awareness: What you fail to see can hurt you. Mind and Society 6(1): 1–18.

Darley, W. K., and R. E. Smith, 1995, Gender differences in information processing strategies: An empirical test of the selectivity model in advertising response. Journal of Advertising 24(1): 41–56.

Dejardin, A. K., and J. Owens, 2009, Asia in the Global Economic Crisis: Impacts and Responses from a Gender Perspective. Bangkok: International Labour Organization Regional Office for Asia and the Pacific.

Delmas, M., and M. W. Toffel, 2008, Organizational responses to environmental demands: Opening the black box. Strategic Management Journal 29(10): 1027–1055.
Diamond, A. M., Jr., 1984, An economic model of the life-cycle research productivity of scientists. Scientometrics 6(3): 189–196.
Dogui, K., O. Boiral, and Y. Gendron, 2013, ISO auditing and the construction of trust in auditor independence. Accounting, Auditing & Accountability Journal 26(8): 1279–1305.
Doig, S. J., R. C. Ritter, K. Speckhals, and D. Woolson, 2001, Has outsourcing gone too far? McKinsey Quarterly 4(Autumn): 25–37.
Duflo, E., M. Greenstone, R. Pande, and N. Ryan, 2013, Truth-telling by third-party auditors and the response of polluting firms: Experimental evidence from India. Quarterly Journal of Economics 128(4): 1499–1545.
Eagly, A. H., and M. C. Johannesen-Schmindt, 2001, Leadership styles of women and men. Journal of Social Issues 57(4): 781–797.
Eisenhardt, K. M., 1985, Control: Organizational and economic approaches. Management Science 31(2): 134–149.
Ellis, P. D., 2011, International trade intermediaries. In J. N. Sheth and N. K. Malhotra (eds.), Wiley International Encyclopedia of Marketing, Part 6. International Marketing. West Sussex, UK: Wiley-Blackwell.
Esbenshade, J., 2004, Monitoring Sweatshops: Workers, Consumers and the Global Apparel Industry. Philadelphia: Temple University Press.
Feinstein, J. S., 1989, The safety regulation of U.S. nuclear power plants: Violations, inspections, and abnormal occurrences. Journal of Political Economy 97(1): 115–154.
Fenwick, G. D., and D. J. Neal, 2001, Effect of gender composition on group performance. Gender, Work & Organization 8(2): 205–224.
Fombrun, C. J., N. A. Gardberg, and M. L. Barnett, 2000, Opportunity platforms and safety nets: Corporate citizenship and reputational risk. Business and Society Review 105(1): 85–106.
Forman, C., A. Goldfarb, and S. Greenstein, 2012, The Internet and local wages: A puzzle. American Economic Review 102(1): 556–575.
Geis, G. S., 2007, Business outsourcing and the agency cost problem. Notre Dame Law Review 82(3): 955–1004.
Gereffi, G., J. Humphrey, and T. Sturgeon, 2005, The governance of global value chains. Review of International Political Economy 12(1): 78–104.
Gold, A., J. E. Hunton, and M. I. Gomaa, 2009, The impact of client and auditor gender on auditors' judgments. Accounting Horizons 23(1): 1–18.
Gray, W. B., and R. Shadbegian, 2005, When and why do plants comply? Paper mills in the 1980s. Law & Policy 27(2): 238–261.
Green, A. W., and E. Melnick, 1950, What has happened to the feminist movement? In A. W. Gouldner (ed.), Studies in Leadership: 277–302. New York: Harper.
Greenhouse, S., 2013a, $40 million in aid set for Bangladesh garment workers. New York Times, December 24: B1.
Greenhouse, S., 2013b, Major retailers join Bangladesh safety plan. New York Times, May 13: B1.
Hainmueller, J., M. J. Hiscox, and S. Sequeira, Forthcoming, Consumer demand for the Fair Trade label: Evidence from a multi-store field experiment. Review of Economics and Statistics.
Handley, S. M., and J. V. Gray, 2013, Inter-organizational quality management: The use of

contractual incentives and monitoring mechanisms with outsourced manufacturing. Production and Operations Management 22(6): 1540–1556.
Hawkins, K., 1984, Environment and Enforcement: Regulation and the Social Definition of Pollution. London: Oxford University Press.
Haynes, K., 2012, Body beautiful? Gender, identity and the body in professional services firms. Gender, Work & Organization 19(5): 489–507.
Heide, J. B., A. Kumar, and K. H. Wathne, 2014, Concurrent sourcing, governance mechanisms, and performance outcomes in industrial value chains. Strategic Management Journal 35(8): 1164–1185.
Heide, J. B., K. H. Wathne, and A. I. Rokkan, 2007, Inter-firm monitoring, social contracts, and relationship outcomes. Journal of Marketing Research 44(3): 425–433.
Heras-Saizarbitoria, I., and O. Boiral, 2013, Research agenda on management system standards. International Journal of Management Reviews 15(1): 47–65.
Huber, G. R., and D. J. Power, 1985, Retrospective reports of strategic-level managers: Guidelines for increasing their accuracy. Strategic Management Journal 6(2): 171–180.
Hult, G. T. M., D. J. Ketchen, and M. Arrfelt, 2007, Strategic supply chain management—Improving performance through a culture of competitiveness and knowledge development. Strategic Management Journal 28(10): 1035–1052.
Ioannou, I., 2014, Redefining strategy in the age of sustainability and social responsibility. Available at SSRN: http://ssrn.com/abstract=2429870, accessed February 25, 2015
Jiang, J. (X.), M. H. Stanford, and Y. Xie, 2012, Does it matter who pays for bond ratings? Historical evidence. Journal of Finance Economics 105(3): 607–621.
Jones, B. D., 2001, Politics and the Architecture of Choice: Bounded Rationality and Governance. Chicago: University of Chicago Press.
Jonnergård, K., A. Stafsudd, and U. Elg, 2010, Performance evaluations as gender barriers in professional organizations: A study of auditing firms. Gender, Work & Organization 17(6): 721–747.
Joshi, A., and H. Roh, 2009, The role of context in work team diversity research: A meta-analytic review. Academy of Management Journal 52(3): 599–627.
Khalil, F., and J. Lawarrée, 2006, Incentives for corruptible auditors in the absence of commitment. Journal of Industrial Economics 54(2): 269–291.
Killgore, W. D. S., and D. W. Cupp, 2002, Mood and sex of participant in perception of happy faces. Perceptual and Motor Skills 95: 279–288.
King, A., and M. Lenox, 2001, Lean and green? An empirical examination of the relationship between lean production and environmental performance. Production and Operations Management 10(3): 244–257.
King, A. A., and M. W. Toffel, 2009, Self-regulatory institutions for solving environmental problems: Perspectives and contributions from the management literature. In M. Delmas and O. Young (eds.), Governance for the Environment: New Perspectives: 98–115. New York: Cambridge University Press.
King, B., and S. A. Soule, 2007, Social movements as extra-institutional entrepreneurs: The effect of protest on stock price returns. Administrative Science Quarterly 52(3): 413–442.
Kinney, W. R., Jr., Z. Palmrose, and S. Scholz, 2004, Auditor independence, non-audit services, and restatements: Was the U.S. government right? Journal of Accounting Research 42(3): 561–588.
Kocer, G. R., and L. Fransen, 2009, Codes of conduct and the promise of a change of climate in

worker organization. European Journal of Industrial Relations 15(3): 237–256.
Kumar, J. A., and A. Chakrabarti, 2012, Bounded awareness and tacit knowledge: Revisiting Challenger disaster. Journal of Knowledge Management 16(6): 934–949.
Lemley, M. A., and B. Sampat, 2012, Examiner characteristics and patent office outcomes. Review of Economics and Statistics 94(3): 817–827.
Levine, D. I., and M. W. Toffel, 2010, Quality management and job quality: How the ISO 9001 standard for quality management systems affects employees and employers. Management Science 56(6): 978–996.
Levy, D. L., 2008, Political contestation in global production networks. Academy of Management Review 33(4): 943–963.
Lipsky, M., 1980/2010, Street-Level Bureaucracy: Dilemmas of the Individual in Public Services. New York: Russell Sage Foundation.
Locke, R. M., F. Qin, and A. Brause, 2007, Does monitoring improve labor standards? Lessons from Nike. Industrial and Labor Relations Review 61(1): 3–31.
Locke, R. M., B. A. Rising, and T. Pal, 2013, Complements or substitutes? Private codes, state regulation and the improvement of labor standards in global supply chains. British Journal of Industrial Relations 51(3): 519–552.
Lount, R. B., Jr., and K. W. Phillips, 2007, Working harder with the out-group: The impact of social category diversity on motivation gains. Organizational Behavior and Human Decision Processes 103(2): 214–224.
Loyd, D. L., C. S. Wang, K. W. Phillips, and R. B. Lount, Jr., 2013, Social category diversity promotes premeeting elaboration: The role of relationship focus. Organization Science 24(3): 757–772.
Macher, J. T., J. W. Mayo, and J. A. Nickerson, 2011, Regulator heterogeneity and endogenous efforts to close the information asymmetry gap. Journal of Law and Economics 54(1): 25–54.
March, J. G., and J. P. Olsen, 1998, The institutional dynamics of international political orders. International Organization 52(4): 943–969.
Mayer, K. J., 2006, Spillovers and governance: An analysis of knowledge and reputational spillovers in information technology. Academy of Management Journal 49(1): 69–84.
Mayer, K. J., J. A. Nickerson, and H. Owan, 2004, Are supply and plant inspections complements or substitutes? A strategic and operational assessment of inspection practices in biotechnology. Management Science 50(8): 1064–1081.
Mayer, K. J., and R. M. Salomon, 2006, Capabilities, contractual hazards, and governance: Integrating resource-based and transaction cost perspectives. Academy of Management Journal 49(5): 942–959.
McBarnet, D., 2007, Corporate social responsibility beyond law, through law, for law: The new corporate accountability. In D. McBarnet, A. Voiculescu, and T. Campbell (eds.), The New Corporate Accountability: Corporate Social Responsibility and the Law: 9–56. Cambridge, UK: Cambridge University Press.
Montiel, I., B. W. Husted, and P. Christmann, 2012, Using private management standard certification to reduce information asymmetries in corrupt environments. Strategic Management Journal 33(9): 1103–1113.
Moore, D. A., P. E. Tetlock, L. Tanlu, and M. H. Bazerman, 2006, Conflicts of interest and the case of auditor independence: Moral seduction and strategic issue cycling. Academy of Management Review 31(1): 10–29.

Muehlenbachs, L., S. Staubli, and M. A. Cohen, 2013, The effect of inspector group size and familiarity on enforcement and deterrence. Discussion paper 13–36, Resources for the Future, Washington, DC.
Nickerson, J. A., and B. S. Silverman, 2003, Why aren't all truck drivers owner-operators? Asset ownership and the employment relation in interstate for-hire trucking. Journal of Economics & Management Strategy 12(1): 91–118.
Oberfield, Z. W., 2010, Rule following and discretion at government's frontlines: Continuity and change during organization socialization. Journal of Public Administration Research and Theory 20(4): 735–755.
O'Callaghan, T., 2007, Disciplining the multinational enterprise: The regulatory power of reputation risk. Global Society 21(1): 95–117.
Oka, C., 2010, Accounting for the gaps in labour standard compliance: The role of reputation-conscious buyers in the Cambodian garment industry. European Journal of Development Research 22(1): 59–78.
O'Rourke, D., 2002, Monitoring the monitors: A critique of PricewaterhouseCooper's labor monitoring. In R. Jenkins, R. Pearson, and G. Seyfang (eds.), Corporate Responsibility and Ethical Trade: Codes of Conduct in the Global Economy: 196–207. London: Earthscan.
Parker, C., 1999, Compliance professionalism and regulatory community: The Australian trade practices regime. Journal of Law and Society 26(2): 215–239.
Partnoy, F., 2006, How and why credit rating agencies are not like other gatekeepers. In Y. Fuchita and R. E. Litan (eds.), Financial Gatekeepers: Can They Protect Investors?: 59–99. Baltimore, MD: Brookings Institution Press.
Phillips, K. W., M. Duguid, M. Thomas-Hunt, and J. Uparna, 2012, Diversity as knowledge exchange: The roles of information processing, expertise, and status. In Q. M. Roberson (ed.), The Oxford Handbook of Diversity and Work: 157–178. New York: Oxford University Press.
Pierce, L., and M. W. Toffel, 2013, The role of organizational scope and governance in strengthening private monitoring. Organization Science 24(5): 1558–1584.
Piore, M. J., 2005, Rethinking international labor standards. In W. Milberg (ed.), Labor and the Globalization of Production: Causes and Consequences: 249–265. New York: Macmillan.
Portillo, S., 2012, The paradox of rules: Rules as resources and constraints. Administration and Society 44(1): 87–108.
Portillo, S., and L. DeHart-Davis, 2009, Gender and organizational rule abidance. Public Administration Review 69(2): 339–347.
Potoski, M., and A. Prakash, 2005, Green clubs and voluntary governance: ISO 14001 and firms' regulatory compliance. American Journal of Political Science 49(2): 235–248.
Power, M., 1997, The Audit Society: Rituals of Verification. Oxford, UK: Oxford University Press.
Reitzig, M., and S. Wagner, 2010, The hidden costs of outsourcing: Evidence from patent data. Strategic Management Journal 31(11): 1183–1201.
Roberts, P. W., and G. R. Dowling, 2002, Corporate reputation and sustained superior financial performance. Strategic Management Journal 23(12): 1077–1093.
Rodríguez-Garavito, C., 2005, Global governance and labor rights: Codes of conduct and anti-sweatshop struggles in global apparel factories in Mexico and Guatemala. Politics and

Society 33(2): 203–233.
Ruggie, J., 2008, Protect, Respect and Remedy: A Framework for Business and Human Rights. Report of the Special Representative of the Secretary-General on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises. Geneva: United Nations, Human Rights Council. http://www.reports-and-materials.org/Ruggie-report-7-Apr-2008.pdf.
Schrank, A., 2009, Professionalization and probity in a patrimonial state: Labor inspectors in the Dominican Republic. Latin American Politics and Society 51(2): 91–115.
Scott, R. W., 1966, Professionals in bureaucracies—Areas of conflict. In H. M. Vollmer and D. L. Mills (eds.), Professionalization: 265–275. Englewood Cliffs, NJ: Prentice-Hall.
Short, J. L., and M. W. Toffel, 2008, Coerced confessions: Self-policing in the shadow of the regulator. Journal of Law, Economics, and Organization 24(1): 45–71.
Short, J. L., and M. W. Toffel, 2010, Making self-regulation more than merely symbolic: The critical role of the legal environment. Administrative Science Quarterly 55(3): 361–396.
Simon, H. A., 1947, Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations. New York: Free Press.
Spence, J. T., and C. E. Buckner, 2000, Instrumental and expressive traits, trait stereotypes, and sexist attitudes: What do they signify? Psychology of Women Quarterly 24(1): 44–62.
Stonewater, B. B., S. A. Eveslage, and M. R. Dingerson, 1990, Gender differences in career helping relationships. Career Development Quarterly 39(1): 72–85.
Teitelbaum, J. C., 2006, Age and tenure of the justices and productivity of the Supreme Court: Are term limits necessary? Florida State University Law Review 34(1): 161–182.
Terlaak, A., and A. A. King, 2006, The effect of certification with the ISO 9000 Quality Management Standard: A signaling approach. Journal of Economics Behavior and Organization 60(4): 579–602.
Tetlock, P. E., 1983, Accountability and complexity of thought. Journal of Personality and Social Psychology 45(1): 74–83.
Thayer, J. F., and B. H. Johnsen, 2000, Sex differences in judgment of facial affect: A multivariate analysis of recognition errors. Scandinavian Journal of Psychology 41(3): 243–246.
Thompson, V. A., 1977, Modern Organization, 2nd ed. New York: Alfred A. Knopf.
Toffel, M. W., and J. L. Short, 2011, Coming clean and cleaning up: Is voluntary disclosure a signal of effective self-policing? Journal of Law and Economics 54(3): 609–649.
Toffel, M. W., J. L. Short, and M. Ouellet, 2015, Codes in context: How states, markets, and civil society shape adherence to global labor standards. Regulation & Governance, forthcoming.
U.S. Public Company Accounting Oversight Board, 2011, Concept Release on Auditor Independence and Audit Firm Rotation. Release No. 2011–006 (August 16).
von Krogh, G., J. Roos, and K. Slocum, 1994, An essay on corporate epistemology. Strategic Management Journal 15(1): 53–71.
Walsh, D., and S. Greenhouse, 2012, Certified safe, a factory in Karachi still quickly burned. New York Times, December 8: A1.
Weber, B., M. Wittchen, and G. Hertel, 2009, Gendered ways to motivation gains in groups. Sex Roles 60(9/10): 731–744.
Williamson, O. E., 1975, Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press.

Williamson, O. E., 1979, Transaction-cost economics: The governance of contractual relations. Journal of Law and Economics 22(2): 233–261.
Williamson, O. E., 2008, Outsourcing: Transaction cost economics and supply chain management. Journal of Supply Chain Management 44(2): 5–16.
Wood, S., 2004, The role of the International Organization for Standardization (ISO) in governing environmental conflict and corporate social responsibility in developing countries: Questions for research. In B. L. Toro (ed.), Propriedad, Conflicto y Medio Ambiente: 15–56. Bogotá, Colombia: Universidad del Rosario.
World Bank, 2013, Worldwide governance indicators: Frequently asked questions. http://info.worldbank.org/governance/wgi/faq.htm, accessed April 2013.
Zandvliet, R., 2011, Corporate social responsibility reporting in the European Union: Towards a more univocal framework. Columbia Journal of European Law (online) 18(1): 38-45. http://www.cjel.net/online/18_1-zandvliet/ accessed February 25, 2015.

Table 1. Industry Composition

Industry	Audits		Factories	
	Number	Percent	Number	Percent
Accessories	1,740	10%	579	10%
Building materials	260	2%	84	1%
Chemicals and plastics	97	1%	42	1%
Electronics	590	4%	184	3%
Food, agriculture, beverage	138	1%	58	1%
Footwear	356	2%	122	2%
Furniture	383	2%	123	2%
Garments	6,188	37%	2,113	36%
Metal products	156	1%	51	1%
Paper, printing, publishing	183	1%	63	1%
Services	50	0%	19	0%
Toys	463	3%	150	3%
Other/unknown	6,191	37%	2,231	38%
Total	16,795	100%	5,819	100%

Table 2. Summary Statistics

Variable	**Mean**	**SD**	**Min**	**Max**
Number of violations	6.49	5.61	0	75
Previous auditor	0.15	0.36	0	1
Maximum tenure	5.39	2.03	1	15
Average tenure	4.86	1.85	0.5	15
Graduate education	0.13	0.34	0	1
Auditing skills training	2.25	1.74	0	12
All-male audit team	0.33	0.47	0	1
All-female audit team	0.50	0.50	0	1
Mixed-gender audit team	0.17	0.37	0	1
Certification training	0.50	0.42	0	1
Brand training	0.59	0.43	0	1
Average age	30.12	4.47	22.5	59
Maximum age	30.62	4.66	25	59
Third-party protocol	0.04	0.19	0	1
Unannounced audit	0.22	0.41	0	1
Audit paid for by supplier or agent	0.56	0.50	0	1
Audit paid for by multinational firm	0.44	0.50	0	1
Re-audit	0.36	0.48	0	1
Number of auditors	1.79	0.58	1	5
Audit sequence	2.96	2.25	1	21
Per-capita GDP (log)	7.77	0.98	5.61	10.68
Regulatory quality	-0.04	0.54	-1.64	1.99
Press freedom	0.33	0.27	0.12	1.00

Note: N =16,795 audits except N =15,812 for audit paid for by supplier or agent and audit paid for by multinational firm, N =11,337 for average age and maximum age, and N =16,676 for press freedom.

Table 3. Regression Results

Dependent variable: Number of violations

	(1)		(2)	(3)	(4)	(5)
	Coef.	Average marginal effects	Coef.	Coef.	Coef.	Coef.
H1 Previous auditor	-0.043*	-0.28	-0.039+	-0.028	-0.044*	-0.027
	[0.020]		[0.020]	[0.026]	[0.021]	[0.025]
H2 Maximum tenure	0.065**	0.12	0.068**	0.078**	0.069**	0.084**
	[0.014]		[0.014]	[0.016]	[0.014]	[0.017]
H2 Maximum tenure, squared	-0.004**		-0.004**	-0.004**	-0.005**	-0.005**
	[0.001]		[0.001]	[0.001]	[0.001]	[0.001]
H3 Graduate education	0.027	0.18	0.030	-0.004	0.021	0.045
	[0.024]		[0.024]	[0.029]	[0.026]	[0.039]
H3 Auditing skills training	0.021**	0.14	0.022**	0.013	0.022**	0.012
	[0.007]		[0.007]	[0.009]	[0.007]	[0.009]
H4 All-female audit team	0.054**	0.35	0.055**	0.048*	0.053**	0.052*
	[0.015]		[0.015]	[0.019]	[0.016]	[0.021]
H5 Mixed-gender audit team	0.067**	0.43	0.068**	0.049*	0.069**	0.067*
	[0.021]		[0.021]	[0.024]	[0.021]	[0.028]
Certification training	-0.021	-0.14	-0.024	-0.027	-0.031	-0.010
	[0.021]		[0.021]	[0.027]	[0.021]	[0.029]
Brand training	-0.014	-0.09	-0.012	0.008	-0.007	0.001
	[0.021]		[0.022]	[0.026]	[0.022]	[0.030]
Average age	-0.025	-0.04	-0.026	-0.015	-0.023	-0.041
	[0.019]		[0.020]	[0.028]	[0.019]	[0.027]
Average age, squared	0.000		0.000	0.000	0.000	0.001
	[0.000]		[0.000]	[0.000]	[0.000]	[0.000]
Third-party protocol	-0.080	-0.52	-0.088	-0.148*		-0.210*
	[0.058]		[0.062]	[0.070]		[0.101]
Unannounced audit	0.029	0.19	0.029	0.030	0.031	0.075**
	[0.020]		[0.020]	[0.025]	[0.020]	[0.027]
Audit paid for by supplier or agent	-0.084**	-0.55	-0.083**	-0.068*	-0.064*	-0.099**
	[0.026]		[0.027]	[0.032]	[0.028]	[0.034]
Re-audit	-0.348**	-2.26	-0.351**	-0.353**	-0.358**	-0.345**
	[0.016]		[0.016]	[0.019]	[0.017]	[0.020]
Per-capita GDP (log)	-0.623*	-4.04	-0.551*	-0.749	-0.714**	-0.210
	[0.262]		[0.264]	[0.473]	[0.267]	[0.389]
Regulatory quality	-0.180	-1.17	-0.169	-0.385	-0.158	-0.621**
	[0.150]		[0.150]	[0.298]	[0.153]	[0.231]
Press freedom	-0.510*	-3.31	-0.531*	-1.059*	-0.402+	-0.879**
	[0.224]		[0.224]	[0.476]	[0.239]	[0.339]
Observations (audits)	16,795		16,585	10,648	16,044	9,266
Factories	5,819		5,748	3,810	5,523	3,082

Standard errors clustered by supplier (factory); ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$. All models also include fixed effects for the audited establishment, audit year, multinational firm country, number of auditors (2 through 5 or more), and the supplier's audit sequence (2nd through 6th or more). All models include three dummy variables to indicate instances in which the following variables were missing data and thus recoded to 0: average age and maximum age (5,458 audits), audit paid for by supplier or agent and audit paid for by multinational firm (983 audits), and press freedom (119 audits). Model 1 is the primary model estimated on the entire sample. Model 2 excludes audits conducted for multinational firms whose audit teams were always all-female. Model 3 includes only audits conducted by at least two auditors. Model 4 excludes audits conducted according to a third-party protocol. Model 5 excludes factories' first audit during the sample period.

Appendix 1. Endogeneity Assessment

Our interviews with the social auditing firm that provided our data consistently indicated that auditors were assigned to audit teams according to three criteria: (1) their language skills, to ensure they could communicate with the audited supplier's managers and workers; (2) their availability, given their other auditing assignments; and (3) the need for at least one team member to qualify as a lead auditor. We conducted several empirical tests to assess whether lead auditors and non-lead auditors differed along dimensions that we hypothesized would affect the discovery and reporting of violations and found some evidence that they did:

- Graduate education. The distribution of educational attainment does not significantly differ between lead auditors and non-lead auditors, as indicated by a Pearson chi-squared test (χ^2 = 4.2; p = 0.24) of an ordinal educational attainment variable coded 1 for high school, 2 for associate degree, 3 for bachelor's degree, and 4 for graduate degree.

- Gender. Lead auditors are no more likely than non-lead auditors to be a particular gender. Males make up 37% of the firm's lead auditors and 33% of its non-lead auditors, a non-significant difference according to a test-of-proportions analysis (z = -1.06; p = 0.29).

- Tenure. The average tenure of lead auditors is 4.4 years of service—significantly more than the 2.3 average for non-lead auditors (Wilcoxon rank-sum test: z = -10.1; p < 0.01).

- Audit skills training. Lead auditors averaged 5.5 audit skills training sessions—significantly more than the non-lead auditors' average of 2.6 (Wilcoxon rank-sum test: z = -9.3; p < 0.01).

The latter two results imply that larger audit teams would tend to have lower average tenure and lower average audit skills training because the higher values for the lead auditors would be increasingly "diluted" by additional non-lead-auditor team members. However, in our analysis, we measure audit team tenure and audit skills training based on each team's maximum values, which do not suffer this "dilution" problem. (Furthermore, our model specification includes a series of dummies to control for audit team size.) These factors isolate our analysis from differences between lead and non-lead auditors, since all audit teams need one lead auditor.

We nonetheless conducted additional analyses to investigate whether endogeneity bias might affect our primary results. Given the differences in audit skills training and tenure between lead and non-lead auditors, we explored whether the estimated coefficients on our other hypothesized variables were substantially altered if we omitted those two variables from our model. The results of the more parsimonious model (reported in Column 2 of Table A1) do not differ substantially from our primary results (reproduced in Column 1 of Table A1). In particular, the coefficient magnitudes and statistical significance of the other hypothesized variables (previous auditor, graduate education, all-female audit team, and mixed-gender audit team) are remarkably stable across these two models. This indicates that irrespective of potential endogeneity concerns associated with audit skills training and maximum tenure, we find no evidence to suggest that such concerns spill over to the inferences associated with our other hypotheses (that is, H1, H3 when professionalism is measured by education, H4, and H5).

Our primary model is vulnerable to the possibility that endogeneity would bias our estimates on maximum tenure and maximum audit skills training if the auditing firm deployed teams whose members had higher maximum values of audit skills training and/or maximum tenure to particular types of establishment that varied in ways that were unobservable but would influence violations. One possible scenario is if the auditing firm assigned auditors with more skill and/or experience to "bad apples"; that is, establishments suspected of being egregiously unconcerned with working conditions. Those lead auditors might be better able to ascertain information from managers and workers at such establishments, which are likely to have many violations. But the obverse might also be true: the auditing firm might send less-trained and less-skilled lead auditors to establishments suspected of having very safe working conditions on the grounds that less expertise would be required to audit them adequately. If these stories are true in our empirical context, we would expect to see much less variation in audit skills training and maximum tenure within the teams auditing the same establishment than between the teams auditing different establishments. In fact, we do not see such a pattern in our data when we decompose variation into within- and between-establishment components. For audit skills training, the within-establishment standard deviation (SD_w) is calculated based on all audit-level audit skills training values after de-meaning them at the establishment level and adding back the grand mean (that is, $x_{it} - \bar{x}_i + \bar{\bar{x}}_i$). The between-establishment standard deviation (SD_b) is calculated based on establishment-level averages (that is, $\bar{x}_i$). For audit skills training, the between-establishment variation ($SD_b = 1.32$) is very similar to the within-establishment variation ($SD_w = 1.21$). That is, the variation in audit skills training among audit teams for two randomly drawn establishments is nearly identical to the variation in audit skills training among the audit teams conducting two randomly selected audits of the same establishment. The same is true for maximum tenure: the between-establishment variation ($SD_b = 1.51$) is very similar to the within-establishment variation ($SD_w = 1.44$). These results fail to support the notion that establishments tend to be consistently assigned teams with any particular average audit skills training or maximum tenure.

Establishments whose audit teams have the highest or lowest average audit skills training in our sample might be the most vulnerable to endogeneity, as they might represent the worst of the "bad apples" or the best of the "good apples." We therefore reestimated our primary model on a subsample that excluded these outlier establishments whose audit teams' average levels of audit skills training fell below the 1st percentile or exceeded the 99th percentile. Similarly, we estimated our model on a subsample that excluded establishments whose audit teams' average levels of maximum tenure fell below the 1st percentile or exceeded the 99th percentile. The results of these models, reported in Columns 3 and 4 of Table A1, are nearly identical to the results of our primary model estimated on the full sample (Column 1). These results provide no evidence that endogeneity is driving our primary results.

Another approach to investigating whether endogeneity might be biasing our primary results is to instrument for the audit team's maximum audit skills training and maximum tenure. We used average values of these characteristics among all auditors based in the auditing firm's field office that staffed each establishment's audits, an approach based on (a) Card's (1995) instrumenting an individual's propensity to attend college using the distance between that individual's domicile and the nearest college and (b) Forman, Goldfarb, and Greenstein's (2012) instrumenting a firm's propensity to adopt Internet technology using the propensity of nearby firms. Because

these office averages vary little over time, the primary form of variation is cross-sectional (that is, between offices). We instrument for auditing skills training, maximum tenure, maximum tenure squared, and—to be as thorough as possible—certification training by including the office-level corollaries to these variables using the audit year's values at each audited establishment's audit field office. The validity of our instruments requires that office-level averages of audit skills training and tenure: (1) be correlated with audit teams' audit skills training and tenure (instrument relevance) and (2) be assumed not to have any direct influence on factories' violation rates (instrument exogeneity). The first requirement is confirmed by observing that the specific audit-team-level and field-office-level variables are correlated at 0.77 for audit skills training, 0.58 for tenure, and 0.51 for certification training. The second condition relies on an assumption that field office demographics (our instrument) should not have a direct influence on audit results, but instead exert influence only via the demographics of the team members drawn from the office.

We sought to estimate this instrumental variables model using Poisson regression with endogenous regressors, but the matrix size created based on the 16,795 establishment-level fixed effects made this infeasible. As a second-best solution, we compared the results of our primary model estimated using fixed-effects OLS regression on the log number of violations (plus 1 to avoid losing cases with no violations)—that is, assuming all variables were exogenous—to the results of a fixed-effects instrumental-variables OLS regression model on the logged number of violations (plus 1). We used the log of the count as the dependent variable in these two models to make their specifications more comparable to those of our primary Poisson regression approach, which assumes that the logarithm of the violation count can be modeled by a linear combination of the independent variables. A Hausman test failed to reject the null, which is that the difference between the coefficients from the IV and OLS approaches is not systematic ($\chi^2 = 52.09$; $p = 0.16$). This implies that the IV approach in the continuous-dependent-variable context does not significantly alter the results, which provides no evidence suggesting that one cannot rely on the more straightforward modeling approach that assumes that the independent variables are exogenous. Given that (a) the OLS on the logged number of violations and (b) the Poisson model on the number of violations are each modeling the logged counts of violations, we infer that the IV Poisson model would not yield results systematically different from those of our primary fixed-effect Poisson model.

In sum, several alternative investigative approaches yield no evidence that endogeneity is biasing our results.

Table A1. Regression Results
Dependent variable: Number of violations

See notes for model definitions	(1)	(2)	(3)	(4)	(5)	(6)
Prior inspector	-0.042*	-0.039*	-0.040*	-0.043*	-0.044*	-0.034*
	[0.020]	[0.020]	[0.020]	[0.020]	[0.020]	[0.017]
Maximum tenure	0.065**		0.065**	0.073**	0.061**	0.049**
	[0.014]		[0.014]	[0.014]	[0.014]	[0.012]
Maximum tenure, squared	-0.004**		-0.004**	-0.005**	-0.004**	-0.003**
	[0.001]		[0.001]	[0.001]	[0.001]	[0.001]
Graduate education	0.028	0.027	0.012	0.027	0.026	-0.001
	[0.024]	[0.024]	[0.025]	[0.024]	[0.025]	[0.022]
Auditing skills training	0.020**		0.020**	0.019**	0.018**	0.024**
	[0.007]		[0.007]	[0.007]	[0.007]	[0.006]
All-female audit team	0.054**	0.057**	0.050**	0.052**	0.054**	0.041**
	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.014]
Mixed-gender audit team	0.067**	0.075**	0.068**	0.065**	0.065**	0.064**
	[0.021]	[0.021]	[0.021]	[0.021]	[0.021]	[0.019]
Average age	-0.026	-0.011	-0.026	-0.027	-0.031+	-0.022
	[0.019]	[0.019]	[0.019]	[0.019]	[0.019]	[0.018]
Average age, squared	0.000	0.000	0.000	0.001+	0.001+	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Certification training	-0.024	0.021	-0.024	-0.026	-0.017	-0.030+
	[0.020]	[0.018]	[0.021]	[0.020]	[0.020]	[0.018]
Third-party protocol	-0.081	-0.084	-0.089	-0.077	-0.086	-0.112*
	[0.058]	[0.058]	[0.059]	[0.059]	[0.062]	[0.056]
Unannounced audit	0.029	0.028	0.034	0.025	0.025	0.057**
	[0.020]	[0.020]	[0.021]	[0.020]	[0.020]	[0.018]
Audit paid for by supplier or agent	-0.084**	-0.085**	-0.087**	-0.085**	-0.087**	-0.063*
	[0.026]	[0.026]	[0.027]	[0.026]	[0.026]	[0.025]
Re-audit	-0.348**	-0.348**	-0.341**	-0.349**	-0.358**	-0.297**
	[0.016]	[0.016]	[0.016]	[0.016]	[0.016]	[0.014]
Per-capita GDP (log)	-0.631*	-0.678**	-0.747**	-0.675*	-0.653*	-0.761**
	[0.262]	[0.262]	[0.265]	[0.264]	[0.263]	[0.243]
Regulatory quality	-0.177	-0.185	-0.262+	-0.163	-0.191	-0.221
	[0.150]	[0.150]	[0.157]	[0.151]	[0.152]	[0.141]
Press freedom	-0.511*	-0.530*	-0.532*	-0.576*	-0.559*	-0.464*
	[0.224]	[0.223]	[0.232]	[0.227]	[0.224]	[0.212]
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of auditors FE (2 to 5+)	Yes	Yes	Yes	Yes	Yes	Yes
Audit-sequence dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Client-country FE	Yes	Yes	Yes	Yes	Yes	Yes
Audits (N)	16,795	16,795	15,698	16,496	16,200	15,209
Firms	5,819	5,819	5,328	5,693	5,551	5,321

All results are from Poisson regression.
Brackets contain standard errors clustered by supplier; ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$.
Column 1 reports estimates of the primary model (reproduced from Table 3, Column 1).
Column 2 reports estimates of a model that omits maximum tenure and auditing skills training.
Column 3 reports estimates on the subsample that excludes audited factories whose audit teams' average auditing skills training falls below the 1st percentile or exceeds the 99th percentile of the sample distribution.
Column 4 reports estimates on the subsample that excludes audited factories whose audit teams' average maximum tenure falls below the 1st percentile or exceeds the 99th percentile of the sample distribution.

Appendix B

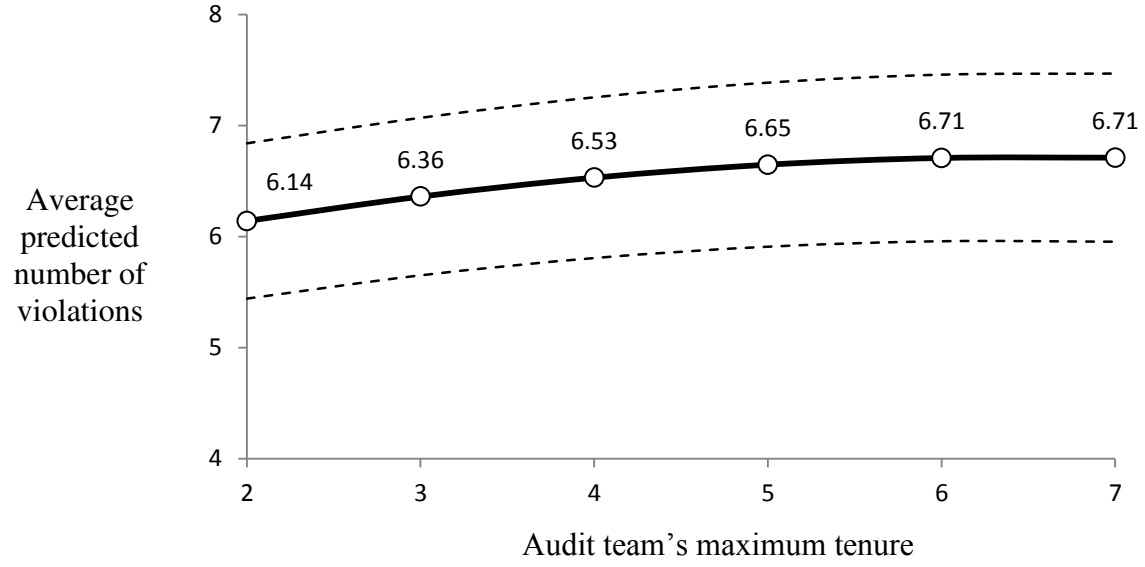
Table B1. Geographic Composition of Supplier Locations

	Audits		Factories	
	Number	Percent	Number	Percent
Africa	100	1%	38	1%
Americas	1,509	9%	522	9%
United States	949		285	
Mexico	172		75	
Brazil	84		37	
Elsewhere in Americas	304		125	
Asia and Australia	14,773	88%	5,084	87%
China (incl. Macao and Hong Kong)	11,746		3,917	
India	708		277	
Vietnam	424		153	
Indonesia	377		137	
Bangladesh	321		140	
Philippines	270		96	
Pakistan	184		71	
Sri Lanka	159		61	
Taiwan	131		56	
Korea	120		49	
Elsewhere in Asia & Australia	333		127	
Europe	413	2%	175	3%
Turkey	186		72	
Italy	88		42	
Elsewhere in Europe	139		61	
Total	16,795	100%	5,819	100%

Table B2. Pairwise Correlations

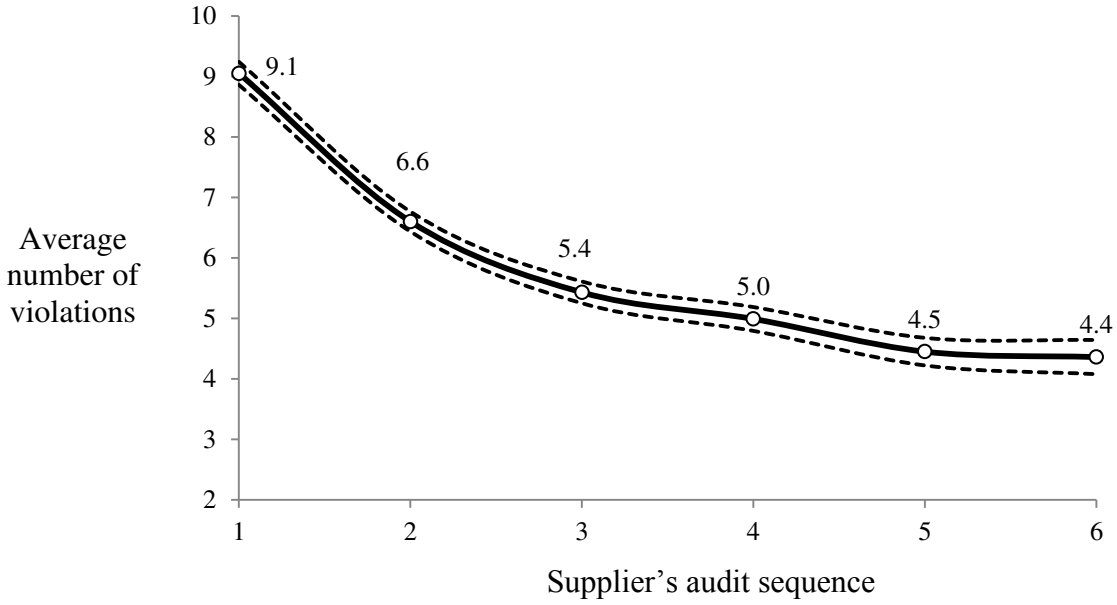
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Number of violations	1.00																					
(2) Previous auditor	-0.13	1.00																				
(3) Maximum tenure	-0.01	0.03	1.00																			
(4) Average tenure	-0.03	0.03	0.92	1.00																		
(5) Graduate education	-0.07	0.09	-0.04	-0.04	1.00																	
(6) Auditing skills training	-0.03	0.05	-0.20	-0.30	-0.04	1.00																
(7) All-male audit team	-0.07	0.07	-0.06	-0.01	0.07	-0.07	1.00															
(8) All-female audit team	0.05	-0.09	0.03	0.07	-0.14	0.01	-0.70	1.00														
(9) Mixed-gender audit team	0.02	0.04	0.03	-0.09	0.09	0.07	-0.32	-0.45	1.00													
(10) Certification training	0.01	0.04	0.09	0.12	-0.04	0.47	0.04	0.03	-0.09	1.00												
(11) Brand training	-0.02	0.06	-0.15	-0.16	-0.09	0.59	0.02	-0.01	-0.02	0.45	1.00											
(12) Average age	-0.10	0.16	0.43	0.49	0.18	-0.17	0.22	-0.22	0.02	0.08	-0.12	1.00										
(13) Maximum age	-0.08	0.16	0.43	0.45	0.19	-0.12	0.19	-0.23	0.07	0.07	-0.12	0.97	1.00									
(14) Third-party protocol	0.12	0.01	-0.02	-0.03	0.05	0.00	0.04	-0.05	0.01	0.03	0.01	0.00	0.00	1.00								
(15) Unannounced audit	0.00	0.05	0.11	0.11	0.02	-0.01	0.02	-0.02	-0.01	-0.03	-0.04	0.06	0.05	-0.09	1.00							
(16) Audit paid for by supplier or agent	0.02	-0.07	0.00	0.01	-0.09	-0.07	-0.05	0.04	0.01	0.01	-0.04	-0.03	-0.02	-0.14	-0.20	1.00						
(17) Audit paid for by multinational firm	-0.02	0.07	0.00	-0.01	0.09	0.07	0.05	-0.04	-0.01	-0.01	0.04	0.03	0.02	0.14	0.20	-1.00	1.00					
(18) Re-audit	-0.12	0.12	-0.04	-0.05	-0.05	0.01	-0.02	0.02	-0.01	-0.02	-0.01	-0.09	-0.08	-0.02	0.07	0.05	-0.05	1.00				
(19) Number of auditors	0.13	-0.05	-0.06	-0.27	0.01	0.04	-0.23	-0.05	0.36	-0.27	-0.18	-0.29	-0.21	0.04	-0.03	0.04	-0.04	0.05	1.00			
(20) Audit sequence	-0.28	0.15	-0.14	-0.20	-0.03	0.31	-0.04	-0.01	0.06	0.09	0.20	-0.11	-0.09	-0.07	0.02	0.01	-0.01	0.12	0.02	1.00		
(21) Per-capita GDP (log)	-0.18	0.08	0.22	0.20	-0.05	0.21	-0.04	0.06	-0.03	0.09	0.14	-0.06	-0.08	-0.07	0.12	-0.16	0.16	-0.09	-0.13	0.14	1.00	
(22) Regulatory quality	-0.19	0.10	0.22	0.21	0.01	0.14	-0.02	0.04	-0.02	0.07	0.09	0.01	-0.02	-0.06	0.13	-0.18	0.18	-0.11	-0.15	0.11	0.95	1.00
(23) Press freedom	-0.27	0.22	0.22	0.25	0.34	-0.05	0.15	-0.14	0.00	-0.02	-0.02	0.46	0.42	0.00	0.12	-0.24	0.24	-0.14	-0.28	0.02	0.54	0.65

Figure 1. Effect of audit team's maximum tenure on average predicted violations per supplier



Note: The figure depicts average predicted number of violations from the fixed-effects Poisson model estimated in Column 1 of Table 3, spanning the 5th to 95th percentiles of audit tenure. Dashed lines represent the 95-percent confidence interval.

Figure 2. Decline of average number of violations per audit in successive audits



Note: The figure depicts sample averages, with dashed lines representing 95-percent confidence intervals calculated as the sample mean ± two times the standard error of the mean.