PHD THESIS DECLARATION

The undersigned

SURNAME: Birhanu

FIRST NAME: Addis Gedefaw

PhD Registration Number: 1465749

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Abstract

The first chapter addresses the consequences of paying bribes on firm investments. Although much is known about the antecedents and consequences of legal influence strategies, there is still little evidence on the consequences of illegal influence strategies (bribery) on firms. Using a unique database that measures firm-level bribery in Africa and Latin America, we find that paying bribes is not just a tax but a strategic choice made by some firms to obtain necessary resources from government offices. We find that paying bribes deters firm investments in fixed assets. We propose different mechanisms that might drive this association and taste their validity empirically. The second chapter attempts to identify the competitive advantage of affiliation with business groups. Studies have shown that affiliation with business groups is positively related to firm performance. However, the mechanism by which this occurs is far from clear. Some attributes the positive association to filling the 'missing markets' while others to appropriation of rent through political connections. In this study, I untangle these alternative explanations using an exogenous shock that destabilized potentially existing political connections of firms in the North Africa, the 'Arab spring'. Using Difference in Difference Methodology, the result reveals that political connections are the main rent appropriation mechanism by which firm, especially, affiliated with family business groups outperform the unaffiliated ones. In the third chapter, I investigate the variation across firms in their ability to adapt to institutional changes with specific reference to political institutions. By specifically focusing on uncertainty in the political environment (frequent government changes), this study proposes and provides evidence that firms can adapt to political uncertainty by creating two kinds of political connections: structural political connections (connections that arise from state control of firms), and relational connections (connections established through inviting new politicians into boards). The results suggest that during frequent regime change, firms that are structurally connected with the state perform better than those with no structural connection. Second, firms with no structural connection improve performance, albeit in specific industries, by renovating their relational connection (changing their board of directors).

DISSERTATION OVERVIEW

Strategy as a discipline seeks to understand the causes of persistent differences in performance across firms, anchoring mainly on firm and industry attributes. Institutions are often considered as mere background conditions that shape the structure of industries and organizations. However, with the increasing relevance of emerging economies both as a destination for many multinational firms and a source of some globally competent firms, understanding institutional effects has become more salient. My dissertation focuses on political strategies and firm governance. It draws insights from Institutional Based View and Transaction Cost Economics perspectives. While both political strategy as a concept and emerging economy as a context of analysis are not new, my dissertation studies the less conventional political strategies in less studied contexts and connects them to firm level outcomes.

Very specifically, it investigates three alternative strategies firms devise to deal with their political environment and the effect of these strategies on firm level outcomes. The first chapter addresses consequences of paying bribes on firm investments. By using a sudden government change as a quasi-experiment, the second chapter attempts to untangle the main sources of rent for business group affiliates. The third chapter studies what type of governance mechanisms and strategies help firms to cope with political uncertainty that arises from repeated regime change.

The first chapter investigates a particular type of political strategy that aims at bending rules on a transaction by transaction basis, bribery. Studies assert that the profitability of firms does not solely depend on the industry structure and their competitive positioning but also on their ability to influence their political environment. Unlike the common political strategies such as lobbying that aim at changing the rules in a transparent process, bribery is not legal and the process is not transparent either. Despite its pervasiveness especially in emerging economies, little is known about the consequences of it at the firm level. This chapter examines the effect of bribes on investments in fixed assets in 13 countries in Africa and Latin America. The result demonstrates that paying bribes is a choice firms make to get the privilege of accessing government resources. However, bribes reduce firms' investments in fixed assets or other activities that affect their long-term results (such as, investments in

quality certifications). Why do firms that bribe invest less? Three possible mechanisms underlying this association are identified and tested empirically. Firms which choose to bribe allocate less resources in investments that have long term returns. It appears that bribing partially substitutes potential returns firms get from long term investments. This study provides empirical evidence on the micro-mechanisms underlying the negative association between corruption and economic growth of nations.

The second chapter attempts to identify the competitive advantage of affiliation with business groups. The choice of structure and strategy of firms is influenced by the prevailing institutional context. It has been observed that business groups, a collection of legally independent firms bound together by block shareholders, are especially common in emerging economies. Arguably, many empirical studies have shown that affiliation to business groups is positively related to firm performance. However, the mechanism by which this manifests is far from clear. Some attributes the positive association to the economizing role of business groups. Business groups fill the weak capital, labor, and product markets as well as reduce transaction costs. In contrast, some other studies show that business groups are strategizing mechanisms by which firms garner rent through political connections. To date, there are very few studies that aim at identifying which of these two are the prevailing sources of rent for firms affiliated with business groups. One of the main reasons is that both value adding and rent seeking roles of business groups lead to better performance of the affiliate firms. This creates an identification problem as to which of the mechanisms is at play. This study contributes to filling this gap by addresses the methodological challenge using a quasi-experiment that disrupts gains from rent seeking behavior as an identification strategy. Recently, the *Arab Spring* has swept many long serving presidents and political parties from power. Among these countries, Egypt and Tunisia pioneered the government change at the beginning of 2011. The unconstitutional change in governments following the *Arab Spring* has disrupted existing connections between politicians and businesses. This creates a discontinuity in rents that firms used to secure through political connections. Using a longitudinal data and Difference in Difference methods, I compared how affiliates of business groups perform before and after the government change in Egypt and Tunisia compared with two control groups: standalone firms in Egypt and Tunisia and affiliates of business groups in

Morocco. The results show that firms affiliated with business groups are severely negatively affected than the control groups after the sudden government change in the two countries. The negative effect is especially high for firms affiliated with family business groups. The implication is that political connection is the main rent appropriation mechanism by which firms affiliated with business groups outperform their standalone counterparts in North Africa.

In the third chapter, I investigate the variation across firms in their ability to adapt to institutional changes with specific reference to political institutions. The ability to adapt to fast changing environment is a key for firms' survival and success. Successful organizations not only make incremental changes and exploit their existing knowledge and resources, but also make transformative and radical changes as the situation demands. The literature on organizational adaptation has mainly focused on how firms deal with radical technological changes and changes in customers tests and preferences. The capabilities firms require to adapt might vary depending on the type of environmental change and importance of that change to firms. For firms in emerging economies, changes in the political environment have a paramount importance since political connection is a valuable competitive advantage for many firms in these economies. Despite a strand of literature that investigate the value of political connection in finance, the strategies firm deploy to deal with dynamic and uncertain political environment are less clear. In this paper, I chose a context where there is a high political uncertainty due to repeated and unpredicted change of governments, Egypt, and investigate how the type of ownership affects firm's adaptability to political uncertainty. This study proposes and empirically tests two mechanisms by which firms can reduce political uncertainty: renovating relational connections (changing board of directors) or being structurally connected with the state (being a state controlled firms). The result shows that structural connection improves performance during political uncertainty. Similarly, renovating relational connection improves performance but only in regulated industries. Using the exogenous shock that triggers the change in board of directors, this study alleviates the problem of endogeneity in estimating the effect board change on performance.

CHAPTER 1

BRIBERY AND INVESTMENTS: FIRM-LEVEL EMPIRICAL EVIDENCE IN AFRICA AND LATIN AMERICA

INTRODUCTION

According to a survey conducted by Globe Scan on behalf of the BBC World Service, corruption is the most "talked about" issue amongst the top 14 global problems, and the second most serious worldwide problem, next to extreme poverty.[1] This interest mirrors the widespread diffusion of corruption in business and society and the mounting awareness on its pernicious effects. In particular, corruption has been shown to be negatively related to countries' economic growth (e.g., Mauro, 1995).

Several reasons may underlie this negative correlation. For example, businesses may grow at a slower pace because of scarce and poorly developed infrastructures, which result from the allocation of public procurement through a crooked system. Also, and perhaps most importantly, corruption might reduce domestic and foreign firms' incentives to invest in a given country because it is perceived as an additional tax on profits. Yet, although prior literature has documented cross-country variations in investment propensity depending on the local level of corruption (e.g., Mauro, 1996), studies built on a cross-section of country-level data cannot show conclusively that the cause of lower investments is corruption alone, rather than the institutional weaknesses usually associated with it. Furthermore, this literature has not convincingly zeroed on the actual process that leads to the negative association between investments and corruption.

In this paper, we exploit fine-grained data provided by the World Bank to study the relationship between corruption and investments *at the firm level*. Specifically, we focus on one type of corruption—bribery—and examine its effect on investments in fixed assets on an unbalanced panel of 5250 firm-year observations from 13 developing countries. In this way, we are able to control for fixed, unobservable factors at the country level, which are potentially correlated with the national average level of corruption.

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[1] The 2010 survey included more than 13,000 adult citizens across 26 countries from all inhabited continents.

We show that there exists a negative effect of bribes on investments, even when adopting an instrumental variable approach in an effort to control for the possible endogeneity of this relationship. Most importantly, we propose different mechanisms at the basis of this association and test empirically for their validity. We conclude that bribery is, at least to some extent, a choice which depends on firms' specific preferences, and we provide evidence consistent with the idea that bribing firms overemphasize short-term results at the expense of long-term ones. Bribery thus does not act like a mere tax, as most of prior literature has generally assumed, but is more profoundly related to firms' behavior.

By providing a deeper understanding of the relationship between corruption and investments, this study makes several contributions to extant literature, providing relevant implications for both strategy and policy making. For the literature on corruption, we offer additional empirical evidence on the effects of bribes on firms' short-term outcomes and long-term investments. Most importantly, as a complement to Asiedu and Freeman's (2009), who investigated the effect of different measures of corruption on firms' investment growth, we put forward and test possible mechanisms underlying such effects. Understanding these mechanisms is of paramount importance to design suitable policies aimed at fighting corruption.

Our findings also enrich the broader literature on non-market strategies. Recent studies have highlighted that firms' profitability depends on factors other than industry attractiveness and competitive positioning, and have stressed how firms can create and gain "influence rents" in addition to the classical monopolistic rents, efficiency rents, quasi-rents, and Schumpeterian rents (Ahuja and Yayavaram, 2011; De Figueiredo, 2009). Specifically, Ahuja and Yayavaram (2011) define "influence rents" as the extra profits earned by an economic actor as the rules of the game of business are designed or changed to suit that actor or group of actors. However, studies in this stream of literature have generally focused on legal nonmarket strategies, such as lobbying. As we discuss subsequently, frequently firms also resort to influencing public policy outcome by making illicit and nontransparent transfers of resources to politicians, officers, and regulators (e.g., Hellman, Jones, and Kaufmann, 2003). We study how these illicit choices are related to firms' strategic behavior and outcomes. Moreover, Ahuja and Yayavaram (2011) discuss the relationship between

influence rents and other traditional theories that seek to explain variance in firm profitability, in particular industry structure and transaction costs economics. In this paper, we provide evidence consistent with the idea that investment in influence rents are substitutes with long-term investments that are related to capabilities development. In this respect, we follow the call of Makadok (2011) to explore interaction effects between the main theories of profits.

We organize the remainder of this study as follows. First, we discuss the conceptual background of bribery with respect to other forms of influence strategies and discuss the main findings of prior related studies. Second, we present our data sources and discuss their validity. Third, we present our empirical analyses on the effects of bribes on investments. Fourth, after documenting a negative effect, we develop and test a set of alternative mechanisms that could explain our results. In this paper we thus follow a "reverse causal inference approach" (Gelman and Imbens, 2013). Gelman (2011) distinguishes two broad classes of causal queries: (1) *forward causal questions*, or the estimation of effects of causes (e.g., what is the effect of X on Y?), and (2) *reverse causal inference*, or the search for a cause of effects (e.g., what causes Y?). Although most of social science studies are organized around the former approach, the latter is of equal scientific importance and can be actually understood within traditional statistical frameworks as a part of model checking and hypothesis generation (Gelman and Imbens, 2013). Among other things, we hope that this paper can contribute to the diffusion of this approach in empirical analyses in strategy.

BACKGROUND

Strategy literature recognizes that firms compete not only in the product and factor markets but also in the political market (e.g., Capron and Chatain, 2008; De Figueiredo, 2009). Active participation in the political market allows firms to influence rules, regulations, laws, or policies to be crafted in a way that will help them gain a competitive advantage or maintain what they already have. To shape their political and regulatory environment, firms pursue influence strategies that engender public policy outcomes favorable to their economic survival and success (Hillman, Keim, and Shuler, 2004). Influencing the political environment might imply having to interact with legislators, executives, and judiciaries. Executives devise rules

and regulations to implement statutes crafted by legislators, and judges are in charge of interpreting the laws.

To gain "influence rents," firms may target different government bodies and use different strategies (De Figueiredo, 2009). Common political strategies in developed economies include campaign contributions, lobbying, and constituency building (De Figueiredo, 2009; Harstad and Svensson, 2011). These strategies seek to influence policy makers and politicians to design regulations that favor firms' economic interest. The influence process involves a market-like (i.e., transparent) exchange process between demanders and suppliers of public policy (Bonardi, 2005; Hillman and Keim, 1995; Stigler, 1971). In emerging economies, in which such a political market is missing or less developed, firms more likely resort to influencing public policy outcomes by making illicit and nontransparent payments to politicians and regulators. This activity is referred to as "state capture' (Hellman *et al.*, 2003). State capture is similar to lobbying and campaign contributions in terms of its objective (changing rules) and the government organ it targets (rule makers), but –unlike lobbying or campaign contribution– the transaction is illicit.

In contrast to strategies targeted at rule makers, firms may target bureaucrats to circumvent rules already in place. Bribery is a transaction-level exchange of favors, aimed precisely at evading rules by making illicit and nontransparent payments (Hellman *et al.*, 2003, Martine *et al.*, 2007; Harstad and Svensson 2011; Banerjee and Hanna, 2012).

In Table 1, we classify influence strategies adopted by firms operating in emerging versus developed economies and list the attributes of each category. Firms' motivation to engage in one form of influence strategy over another depends on expected costs and payoffs, as well as on the availability of alternative strategies at their disposal. What is more, the selection of one form of influence strategy over another can have varying impacts on firm performance. Previous studies on corruption that have used the compiled corruption indexes tend to view state capture and bribery as equivalent (Hellman *et al.*, 2003). In this respect, we clarify that bribery is one aspect of corruption aimed at circumventing rules in transacting with bureaucrats. It involves illicit (illegal) exchange of favors and is mainly (but surely not exclusively) practiced in emerging economies (Hellman *et al.*, 2003).

Insert table 1 about here

Even though corruption and bribes are widely diffused, strategic management literature has largely ignored them in the past. However, if strategy as a scholarly field entails an understanding of all firms' initiatives to enhance their performance, the pervasiveness of corruption implies that the field's current focus solely on legal influence strategies actually limits our knowledge of influence activities. Understanding why firms adopt illegal influence activities rather than the legal alternatives and the consequences of these choices are thus topics worth investigating.

Scholars addressing corruption decisions at the firm-level have traditionally examined the factors that affect the probability that multinational companies pay bribes to enter a host country and the related mode of entry (e.g., Cuervo-Cazurra, 2006; Uhlenbruck *et al*., 2006). These studies, however, devote less attention to heterogeneity among firms in their response strategies when facing the same institutional environment, or to how their specific response affects their performance. Moreover, they also generally measure corruption at the country level, largely on a perceptual basis, although these measures may lack conceptual clarity (Treisman, 2007). Financial economics literature has investigated corruption in some more depth (e.g., Mauro, 1995, 1996; Treisman, 2000, 2007), although only a handful of studies have begun to unravel the drivers and the consequences of corruption at the firm level.

A long-held convention in the literature has been that the demand- and supply-side of bribes tend to coincide, with all the firms acting in a given environment being subject to the same (illicit) requests if they want to stay in business. Yet Gueorgiev *et al*. (2011) contend that we should not view bribery as an additional tax imposed on businesses engaging in activities such as obtaining business licenses, moving goods through ports or passing regular (or irregular) business inspections, rather "firms may be complicit in using bribes to gain access to rents existing in the protected domestic sectors." They add: "We believe this is a more realistic model that better captures the nuances of business corruption." (Gueorgiev *et al*., 2011: 3) In other words, bribery is—at least to some extent—a strategic choice determined by the expected pay-off of pursuing such choice.

The rather limited empirical evidence at the firm-level provides some support to this stance. Analyzing a sample of Ugandan firms, Svensson (2003) finds that typically firms have to bribe when dealing with public officials whose actions directly affect the firms' business operations. At the same time, he finds that conditional on the decision to pay, the amount of bribes paid is determined in a bargaining process where firms' outside options matter. It thus seems that firms have some leeway when deciding whether to bribe or not. Accordingly, Jeong and Weiner (2012), using data from the UN Oil-for-food program, show that firms pay larger bribes when there are stronger financial and managerial incentives, and pay less when their home countries have implemented the *OECD Anti-bribery Convention*, i.e. when the legal consequences of being caught paying are stronger. Consistent with the economic theory of crime (e.g., Becker, 1968), they thus find that bribery decisions are a function of expected returns.

With regards to the consequences of corruption at the firm-level, theoretical arguments are contrasting: Some authors suggest that bribery greases the wheels of commerce, whereas others believe that bribery sands the wheel of growth (Zhou and Peng, 2012). More specifically, on the one hand, bribery may help firms access timely information that is not publicly available and overcome a weak and complex legal system. For example, Dreher and Gassebner (2011), using country level corruption indices, found that paying bribes reduces the negative impact of lengthy bureaucratic requirements for entrepreneurship. On the other hand, however, other authors have argued that high levels of corruption impose high costs on businesses and hurt long-term performance (e.g., Djankov *et al.*, 2002). In particular, corruption seems to exert a negative effect on firms' sales growth (e.g., Beck *et al.*, 2005; Fisman and Svensson, 2007), and this effect is even stronger for small and young firms (Seker and Yang, 2012). Paying bribes is also associated negatively with return on investment (Toole and Tarp, 2012) and productivity (De Rosa *et al.,* 2010).

Understanding the effect of bribes on investments at the firm level might shed some light both on the relationship between bribes and firm performance as well as on the process that underlies the negative association of corruption and growth at country level. To date, the empirical literature on the effect of corruption on investments at the firm-level is not clear cut. Inter alia, Asiedu and Freeman (2009) find that corruption has a negative and significant

effect on investment growth for firms in transition countries but has no significant impact for firms in Latin America and Sub-Saharan Africa. On the other hand, Malesky and Samphantharak (2008) using governors change in Cambodia as a proxy for unpredictability, find that unpredictability of bribes significantly reduces firm level investment. They argue that predictable bribes are a second best to corruption-free business environment for investment.

Against this background, this paper sets out to tackle two related objectives. First, we aim to verify the impact of bribes on *firm level of investments*. Although corruption occurs everywhere, it is particularly widespread in transitional and less developed economies (Hellman *et al*., 2003): our empirical study thus focuses on these countries. Second, provided that a negative effect exists, we aim to zero on the mechanisms that underlie such effect. We thus propose several possible explanations of the negative correlation between bribes and investments at the firm level, and test empirically for their validity.

DATA

For the purposes of this study, we use a firm level data from the World Bank business environment survey. The World Bank periodically collects enterprise data from emerging economies about various business environment and constraints of growth. It is a firm-level survey drawn from a representative sample of firms in a private sector. The sample respondents were chosen from a universe of eligible firms obtained from the respective countries' statistics agencies, tax or business license authorities, or business associations. This universe consists of the nonagricultural, formal, private sector economy. Firms which have less than 5 employees or those 100percent owned by the government are excluded from this survey. The survey uses a global approach using a standardized questionnaire to allow cross country study. Moreover, the standardized questionnaire is translated to the local language and back translated into English to check the accuracy. In addition to using back-translations into English, translations are checked by the contractor and World Bank staff whenever possible.[2]

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[2] For detailed information about the methodology of the survey, see http://www.enterprisesurveys.org/Methodology/.

In contrast with empirical studies that exclusively rely on cross-sectional data from the World Business Environment Survey (e.g., Zhou and Peng, 2012), the present study takes advantage of more recent survey waves by the World Bank and taps recently established firm panel data. In particular, we built a firm-level panel data set of more than 5000 firm-year observations from eight Latin American and five African countries. The reason we focus our analysis on these 13 countries is precisely because these are the countries for which panel data is available.

Among the 5,250 firm-year observations in our sample, approximately 14percent are from Africa (Burkina Faso, Cameroon, Cape Verde, Malawi, and Niger), and the remaining 86percent are from Latin American countries (Argentina, Chile, Colombia, Panama, Paraguay, Peru, Uruguay, and Venezuela). However, these data contain missing observations, a fact which is not unexpected, in that the data involve countries in which large-scale data collection at the firm level is less than systematic. We control for this limitation by cutting the samples for our analyses in different directions through robustness checks. Moreover, these data still represent the best available source considering both scale and quality to address the question of interest in this study.[3] This however, is not to exclude other alternative approaches of collecting data that reduces measurement error such as randomized response technique employed by Jensen and Rahman, (2011), in the context of Bangladesh and unmatched count technique by Gueorgiev and Malesky (2012) in the context of Vietnam or in-depth firm studies by Cole and Tran (2006). However, adopting techniques of these sort requires a firsthand data collection that very likely limits the scope of the survey to few firms or firms in a single country.

An important obstacle that may hinder our effort to understand the impact of bribes on firm-level investments relates to measurement errors, which may be particularly salient with regards to corruption data. Ideally, we would need to have precise and objective measure of bribes paid by each single firm in the survey. Yet, coming up with a precise and objective measure of bribes is a challenging task, since the action itself does not leave any paper trail:

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[3] Some of the firms interviewed in the first-round survey were missing in the second survey for various reasons: refused to participate, did not exist, or had relocated. We investigated whether the bribe payments reported in the first survey by these non-responding firms had an effect on their absence in the second survey, but we did not find any such effect (see Table 1a in the Appendix).

Few might be expected to be sincere enough to report his/ her experience directly, due to its nature of confidentiality.

To reduce measurement errors, the World Bank Group has taken a number of precautions during survey data collection. First, the framing of the question regarding payment of bribes did not assign blame directly to the respondents and it appeared after the participants had built rapport with the data collectors. The question followed many other items regarding the type of service they had requested from government offices, such as license, credit, and infrastructure services, and whether officials had asked them to pay bribes. Second, to ensure confidentiality, the survey was conducted by independent data collectors, who were not connected to local governments. Third, the World Bank grants anonymity to the participant firms by keeping their identity secret. Fourth, the question about firms' experience of paying bribes was framed indirectly, to reduce self-censoring biases, as follows: "On average, what percentage of total annual sales do firms like yours pay in informal payments to public officials to get things done?" Although this indirect formulation of the question might seem problematic, asking indirect questions (i.e., asking subjects to answer structured questions from the perspective of another person or group) for socially sensitive items is actually a common practice in a wide body of research, since it reduces biases of self-censorship (for a discussion of this topic, see among others Neeley and Cronley (2004) and Fisher (1993). In essence, it is expected that respondents project their unconscious biases into ambiguous response situations and reveal their own attitudes (Campbell 1950; Holmes 1968; Sherwood, 1981). The empirical evidence strongly supports the idea that indirect questioning reduces social desirability bias (Neeley and Cronley, 2004). Hence, although we recognize that the measure of bribes we use is not perfect, it is still one of the best *available* measures, and it has been repeatedly used in the finance and economics literature (e.g., Asiedu and Freeman, 2009; Bennedsen, Feldmann, and Lassen, 2009; Triesman, 2007). The World Bank group has used this indirect measure because it is more effective for soliciting bribing experiences than direct questions (Kaufmann, Kraay, and Mastruzzi, 2006; Reinikka and Svensson, 2002; Triesman, 2007).

In Table 2, we report the descriptive statistics of bribes firms paid across the countries included in our sample. On average, firms in Paraguay paid the greatest share (5%) of their

sales as bribes to influence government officials, followed by Cameroon (4.4%) and Colombia (4.0%). In contrast, firms in Cape Verde, Peru, and Venezuela paid on average the lowest share of their sales: 0.15percent , 0.16percent , and 0.27percent , respectively.

Insert table 2 about here

MEASURING THE EFFECT OF BRIBES ON INVESTMENTS

We begin by studying the effect of bribes on firms' investments. To this end, we estimate the following model:

$$I_{it} = \beta_o + \alpha_i + \gamma_i + \delta X_{it} + \beta B_{it} + \mu_{it} \quad (1)$$

where I_{it} is the logarithm of investments in fixed assets firm i makes at time t, as explained by a constant β_o, α_i a vector of country dummies, γ_i a vector of industry dummies, the amount of bribes paid by firms B_{it}, and a vector of time-varying firm characteristics (X_{it}) that may affect the dependent variable; μ_{it} is the error term. Control variables include firm size and age, CEO experience, and dummies that indicate whether a firm is owned by foreign investors and it is publicly traded. Table 3 summarizes the definitions of all these variables and their descriptive statistics, while table 4 presents the pairwise correlation matrix.

In table 5, we present our initial econometric results. In particular, column 1.a reports the results of the estimation of model (1), whereas column 1.b reports the estimates of the same model with the one-period lagged value of bribes. In both models, bribes is shown to exert a negative and statistically significant effect on investments, although the significance of the lagged model is higher, even with a substantially reduced sample size.

These models, however, may raise endogeneity concerns: both bribes and investments might be driven by some common unobservable factors, and thus μ_{it} and B_{it} may be correlated, leading to a biased estimate of β. For example, officials might determine the amount of bribes paid by firms according to their ability to pay and cash availability, which in turn will influence both bribes and investments. If this is the case, however, we would find a positive correlation between I_{it} and B_{it}, which (although being spurious) would in any case make our results less significant. Firms may more generally make a choice to invest their

resources in productive or rent-seeking activities (bribing). Their choice is determined by their capability to attain higher returns on their investments in the two alternatives. Those firms that are effective at garnering rent by soliciting favors prefer to bribe officials, whereas those that are effective at doing the core business will prefer to invest their resources in those tasks. Ultimately, both choices may lead to better performance, and it becomes difficult to identify the consequence of bribery.

To address this issue, we adopt an instrumental variable approach (Wooldridge, 2002) and then try to unearth the mechanism that explains the negative relationship between bribes and investments. We propose two instruments for the bribes a firm pays. First, following the finance and economics literature (e.g., Cai, Fang, and Xu, 2011; Fisman and Sevensson, 2007), we use the average bribes paid in the industry-country-year to which the observation belongs. The average industry-country-year-level bribes depends on industry characteristics, such as the degree of dependence on infrastructure or other government services, industry munificence, degree of pervasiveness of corruption in each country, and a time-specific factor: We assume and actually find that the average industry-country-year bribes paid is correlated with firm-level bribes. At the same time, after controlling for industry and country effects, average industry-country bribes paid are uncorrelated with firm-level profitability or any other firm-specific outcomes.

Insert tables 3, 4, and 5 about here

According to the F-statistic, this instrument generally meets the minimum standard for the test of the exclusion restriction from the first stage (i.e., F-test of at least 10). Shea's partial R-square of the instrument also explains most of the variance in the models, reinforcing the relevance of the instrument. The results of estimation of the instrumented models – both contemporaneous and lagged – are presented in columns 2.a and 2.c of Table 5. Parameter estimates confirm that the payment of bribes has a significant negative effect on the

amount of investment firms make in fixed assets, an effect that is even stronger in the instrumented model.[4]

Besides being statistically significant, this effect is also economically meaningful: according to the contemporaneous effect, a one-unit increase in the amount of bribes paid (1% of sales volume of firms) decreases the amount of investment by 3.3percent in the OLS and 11.3percent in the IV model. A similar unit increase in the lagged bribes reduces investment by 4percent and around 9percent in the OLS and IV model, respectively.

Since the instrument we used is not firm-specific, we also run a specification including an additional, firm-specific instrument. To this end, we exploited a question included in the World Bank survey that asks firms the extent to which they believe the court system is impartial, fair and uncorrupted (the answer is a 4-point Likert scale from strongly disagree to strongly agree), and inserted this instrument in the first stage together with our main instrumental variable. The assumption is that the judgment on the court is negatively related to the propensity of firms to bribe but uncorrelated to their investments. The main results (see columns 2.b and 2.d of Table 5) are robust to this specification, and the parameter estimate of bribes is negative and statistically significant.

EXPLAINING THE EFFECT OF BRIBES ON INVESTMENTS

Having established a negative effect of bribes on firms' investments, we now turn to the analysis of the possible mechanisms behind this effect. In other words, why are bribes and investments negatively related? In this section, we suggest four propositions that address and attempt to explain this facts, and then test the validity of each empirically.[5]

We start the analysis of the relationship between bribes and investments by making a first, simple statement.

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[4] As a robustness check, we used as an alternative instrument also the *share of firms* in the industry-country-year that paid bribes. This instrument may capture the notion that in a given industry-country-year, paying bribes is the norm and thus less costly to any firm, from a social or a stigma point of view, than a situation in which few or no firms pay bribes. The qualitative results using the share of firms that pay bribes in lieu of or together with the average bribe paid do not change.

[5] For these new econometric tests we need new variables; we employ all available observations in any specific estimation.

Proposition 1. Firms are forced to pay bribes by crooked officials. As firms' financial resources are limited, and bribes infringe directly on those, bribing firms will invest less merely because they have less financial resources.

Proposition 1 provides the simplest possible explanation for the negative relationship between firms' bribing and investments. We will show that it does not hold true. Proposition 1 includes two parts. The first is that firms typically do not *decide* to bribe, but firms that bribe are forced to do it. Yet, as we previously argued, the most recent academic contributions on bribing acknowledge that (most of the times) firms actually decide strategically to bribe (e.g., Gueorgiev *et al*., 2011; Jeong and Weiner, 2012). In our study, we also find evidence consistent with the idea that firms behave in this way. In the World Bank survey, firms responded to two relevant questions, involving their experience in paying bribes and about whether government officials have asked for bribes or were expecting to receive them. More specifically firms were asked if a firm was asked or expected to make an informal gift or payment by government officials when it request services such as new business license, renewal of license, electricity connection etc. from government offices.

As we show in Table 6, 17percent of the firms paid bribes, while 15percent of sample firms were asked to pay bribes. If paying bribes was not a strategic choice, we should observe that the majority of firms that paid bribes were asked or expected to pay bribes, and the data should also indicate that the majority of firms that were asked to pay actually paid. Yet, this is not the case. Rather, more than 50percent of the firms that paid bribes (9% of 17%) were not asked to, and nearly 50percent of the firms that were asked (7% of 15%) did not pay. Thus, even if asked, firms may choose not to pay. Clearly, respondents might not admit it, given the sensitive subject matter. However, if firms were generally concerned about answering this question, it is not clear why a high percentage of unsolicited firms declared that they paid bribes. In addition, the general precautions taken by the World bank while administering the survey described in the Methods section still apply. The data in Table 6 thus suggest that firms are more likely to pay bribes if they are asked (8% vs. 17% against 7% vs. 83%), but because more than 50percent of firms that pay bribes were not asked, factors other than demand by government officials explain bribery as well.

Insert table 6 about here

Furthermore, econometric analyses show that firms more likely to bribe are the ones the literature suggest to have a lower risk of being caught. Prior studies (e.g., Cuervo-Cazurra, 2006; Jeong and Weiner, 2012; Bennedsen *et al.,* 2009) indicate that the risk of being found guilty of bribing depends on the extent to which firms are required to disclose their activities to stakeholders, as well as their experience with operating in corrupt business environments. In turn, this risk is respectively higher (lower) for public (private), international (domestic), and large (small) firms. In our sample, we do find results consistent with these predictions. At the same time, and as expected, firms that pay bribes are more likely to obtain what they need from public officers. Results of these regressions are reported in the Appendix for the sake of brevity, but overall we can conclude that prior literature and results from our sample suggest that, at least to some extent, firms *decide* to bribe on the basis of expected benefits and costs (e.g., Becker, 1968).

Proposition 1 also suggested that a possible reason underlying the negative relationship between bribes and investments is simply that after bribing, firms (whether they decide or are forced to bribe) will have a lower amount of financial resources available to invest. To test this proposition, we would ideally need a measure of the liquidity or financial slack of firms, which unfortunately we do not have. However, in the survey there is a question that relates to firms' access to finance. Specifically the question asks the respondents: "To what degree is *Access to Finance* an obstacle to the current operations of this establishment?". If proposition 1 was true, we would expect that firms that bribe and at the same time are more financially constrained would make even lower investments. To test this proposition empirically, we introduced the interaction effect of the extent of financial constraint a firm experienced and the amount of bribes paid. As the results reported in Table 7 show, this interaction effect does not have any significant effect on the amount of investment made in fixed assets, while the (direct) negative effect of bribes on investment persists . In sum, the empirical evidences indicate that paying bribes is a choice that firms make and those firms that choose to bribe are not in short of cash to invest in fixed assets, rejecting Proposition 1

Insert table 7 about here

Proposition 2. Bribing firms will invest less since an investment represents a sunk cost that suppresses even more the (future) bargaining power of firms. As a result, firms that bribe more prefer to invest less, so as to avoid being exposed to further extortion from crooked officials.

Proposition 2 describes an alternative mechanism underlying the relationship that we study. While Proposition 1 was mainly based on resource scarcity, Proposition 2 contends that bribes and investments are negatively related because of firms' strategic foresight. Proposition 2 in particular suggests that an investment made following the favors extended by crooked bureaucrats represents a sort of sunk cost that suppresses even more the bargaining power of firms. Investments in fixed assets are less reversible, so officials can extract more rent from those firms that make such investments following their favors. As a result, firms that bribe more strategically decide to invest less, so as to avoid further extortions in the future.

If this was true, we would expect that firms that engaged in bribery *and* have invested in fixed assets at some point in the past, will pay more bribes in the future, because they are more subject to officials' extortion. We thus test empirically this prediction.

As Table 8 shows, the parameter estimate of the interaction between lagged bribes paid and lagged investments correlates negatively with current bribes paid. Hence, making investments does not appear to expose firms to further extortion, and lower investments following bribery are unlikely to be caused by firms' strategic responses to potential future bribes. Proposition 2 is therefore also rejected.

Insert table 8 about here

Proposition 3. Firms self-select their strategy to grow, so that more efficient firms decide to make investments, whereas less efficient firms decide to bribe.

Proposition 3 suggests that bribes and lower investments are both driven by an unobservable factor – efficiency – whereby less efficient firms are likely to bribe more and

invest less, because their ability to reap returns from their investments in fixed assets is lower. In essence, Proposition 3 is based on heterogeneity in efficiency across firms and self-selection.

Although we lack data to properly calculate firms' productivity, we used exports as a proxy for firms' efficiency. Specifically, we used a dummy variable collected in the World Bank survey that takes the value of 1 if the firm is exporting, and 0 otherwise. The international economics literature has widely documented that exporting firms, when compared to non-exporting ones, are characterized by a significantly higher productivity (see Bernard *et al*., 2007). Due to the existence of substantial start-up costs to become an exporter and potentially higher competition in export markets, only those firms which are ex-ante efficient enough to bear these costs decide to start exporting (e.g., Clerides, Lach, and Tybout, 1998; Bernard and Jensen, 1999).

We then tested for Granger causality between bribes and export (Greene, 2003). If less efficient firms bribe more, we should find that the non-exporting status Granger-causes an increase in bribes paid. However, as Table 9 shows, we find no effect at the conventional significance level. Therefore, we can discount the notion that less efficient firms pay more bribes and simultaneously invest less.

We have therefore discarded the possibility that bribes exerts a negative effect on investments because of (ex-post) lack of financial resources, (ex-ante) differences in skills, and strategic foresight to avoid further extortion. At the same time, we have provided some evidence consistent with the idea that firms self-select into bribing. Hence, why do firms that bribe more invest less? We put forward an alternative explanation that bribes and investments are negatively related because they are pursued by different types of firms, with different—contrasting—sets of preferences.

Insert table 9 about here

Proposition 4. Bribes and investments are substitutes as they are pursued by firms with different preferences: firms discounting more long-term profits will prefer bribes to

investments, whereas firms concerned about long-term profits prefer investments in fixed assets.

In a nutshell, Proposition 4 suggests that to enhance their performance, firms characterized by a short-term orientation (i.e. that overvalue present profits and discount long-term, future profits) prefer to resort to influence rents (Ahuja and Yayavaram, 2011), also through bribes, whereas more long-term oriented firms invest in assets as well as in capability development. The assumption – supported in the literature – is that bribing enhances short-term performance, whereas by contrast investments favor long-term outcomes. Firms will select one over the other depending on their temporal preferences. While we can say upfront we are not able to prove this claim, we will offer some empirical evidence that is consistent with it.

First, we empirically show that not only are bribes negatively related to investments in fixed assets, but also to other variables that entail the interest in long-term outcomes. In particular, we explore the drivers of firms' decisions to obtain quality certifications such as ISO (International Organization for Standardization) for manufacturing and services, HACCP (Hazard Analysis and Critical Control Point) for foods which are only internationally recognized.[6] Getting such quality certificates requires maintaining quality for a consistent period of time and the investments needed to do so. It is also very difficult to get such quality certificates through bribing since they cannot be issued by the sole decision of local officials. Table 10 shows that, controlling for other variables at the firm level as well as for industry effects, firms that bribe are less likely to obtain quality certifications.

Insert table 10 about here

Second, we verified that bribes are also related to additional proxies of firms' short-term orientation. Specifically, we estimated a model where the dependent variable is the share of a firm's temporary employees (i.e., employees with fixed term contracts over total employees). Having a large share of employees with temporary contracts is associated with short-term orientation of the firm (Le Breton-Miller and Miller, 2006). Controlling for

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[6] Certificates granted only nationally not recognized in international markets are not included.

relevant covariates, we are able to show that bribes are associated with having higher share of temporary employees (see Table 11).

Finally, we show that in our sample, consistently with prior literature, bribes are positively related to short-term (positive) results. In particular, paying bribes increase the likelihood of accessing government owned resources such as business licenses, operating permits and infrastructure services. Results are presented in table 3a in the annex.

CONCLUSIONS

When formal and legal influence markets are less functional for firms to influence their political and regulatory environment, they resort to an alternative influence strategy: bribery. The attributes of bribery differ from those of other influence strategies. First, it is aimed at circumventing rules without changing the status quo. Second, because bribery transactions cannot be enforced by legal means, the first mover in the transaction remains under the power of the partner, who may use it opportunistically (Lambsdorff, 2002; Shleifer and Vishny, 1993). Third, firms may face legal penalties if they are found guilty of bribing. These attributes affect the types of firms that adopt such an influence strategy and the payoffs and costs of adopting it.

By using a unique database that measures firm-level bribery in Africa and Latin America from two waves of surveys conducted by the World Bank, we investigated the relationship between bribery and firm investments. We found that bribery deters firms' investments in fixed assets, even after controlling for endogeneity with an instrumental variable approach. In our sample, 80percent of the firms are small and medium-sized, and 93percent are domestic firms, signifying that a large portion of firms that are engines of indigenous growth for emerging economies are potentially trapped in corrupt transactions. Considering that a large segment of firms in the emerging economies in our sample are prone to paying bribes and more bribes reduce firms' investments, emerging economies may be losing, to corruption, important stimuli of investment and ultimately growth opportunities.

Following a process of reverse causal inference (Gelman and Imbens, 2013) we then asked ourselves: why are bribes and investments negatively related? We thus explored some mechanisms that may explain why paying bribes reduces investment and find results

consistent with the idea that there appears to be a substitution effect between investments and bribes, which depends on the temporal perspective of the firm. Firms that pay more bribes are relatively more interested in short-term outcomes. We would also like to point out that the reverse causal inference approach that we adopted in this paper is not common in strategy research, even though it is scientifically valuable like more standard direct causal inferences. We think that on many occasions strategy scholars could start with observed correlations, suggest alternative theories that may produce that correlation, and test whether they can corroborate or falsify them.

Our study has several limitations. First, with regard to the survey item about bribe payments, firms answered an indirect question. Even tough, it is a common strategy used to solicit responses about socially undesirable issues, it cannot ensure that firms are reporting their actual experience. Therefore, our analysis and results should be taken with this caveat in mind.

Second, we only provided limited empirical evidence consistent with the hypothesized mechanism that relates bribes to investments. The substitution effect we described is intuitively appealing. For example, in a different context, if young people can find jobs through nepotism and recommendations that do not reflect merit or ability, some will choose this route to seek employment and avoid the costs and effort associated with investments in education. As we predict for firms, this choice means substituting short-term advantages for long-term gains accrued through education. We did rule out some alternative explanations, but more research is needed to shed light on the substitution effect between investments and bribes. Investments are crucial for firm growth, and by making fewer investments in fixed assets, firms remain small. In our sample, small firms typically pay more bribes (see table 3a in the Appendix). Thus, the short-term orientation of firms to gain rents by bribing might lead them into a vicious circle. We only hint at this potential dynamic, but it could be a relevant consequence of corruption on firms' growth or, more generally, of firms' attitudes toward attempts to influence government officials, as opposed to making investments that enable them to obtain benefits irrespective of influence strategies. Further research could provide insights into the extent and significance of this phenomenon and help explain why small firms in these countries do not grow larger. Because we show that bribery is not only associated

with less efficient firms, reducing corruption may have a nontrivial effect on the growth of firms that choose to bribe government officials.

Finally, while our analysis seems to indicate that paying bribes is –at least to some extent – a strategic choice and we suggested that firms decide to pay bribes rather than make investments in fixed assets are more short-term oriented, several questions remain open. In particular, which mechanisms favor such an orientation? Because it is a firm-level choice, there must be firm-specific explanations other than just corrupt institutions. The finding that bribing is more likely in the case of small, domestic firms is also important. To the extent that such firms are the foundation of economic growth in emerging economies, they put a considerable toll on growth opportunities of not only firms but also their countries. We hope further research continues to address these important issues.

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TABLE 1. Influence strategies and their features

Features of influence strategies	Types of influence strategies		
	Campaign contribution, lobbying	*State capture*	*Bribery*
Objectives	Create/change rules	Create/change rules	Bending (circumventing) rules
Target	Policy makers and regulators	Policy makers and regulators	Bureaucrats
Transparency	Transparent	Less transparent	Less transparent
Prominence	Developed economies	Emerging economies	Emerging economies

TABLE 2. Summary statistics of bribes by country

Country	Number of Observations	Mean	Std. Dev.
Argentina	628	0.94	3.87
Chile	491	1.23	6.15
Colombia	123	3.98	9.70
Panama	494	0.53	2.4
Paraguay	152	4.99	15.6
Peru	292	0.17	1.6
Uruguay	86	2.85	5.59
Venezuela	763	0.28	2.24
Burkina Faso	62	3.45	8.11
Cameroon	110	4.41	11.22
Cape Verde	73	0.15	0.83
Malawi	116	1.28	4.03
Niger	83	3.61	6.50
Total	3,473	1.26	5.78

TABLE 3. Descriptive statistics and definition of variables

Variables	*Operational definition of variables*	*N*	*Mean*	*SD*
Bribes	Percentage of sales paid by firms to government officials "to get things done"	3,473	1.26	5.78
Access to government resources	A dummy variable that takes 1 if a firm gets resources it requested from government offices and agencies such as finance, infrastructure services and entry licenses	3,331	0.96	0.19
Investments	Money spent for purchase of machinery and equipment (log transformed)	3,613	1.90	6.01
Medium size firms	Firms with more than 19 and fewer than 100 employees	5,249	0.38	0.49
Large size firms	Firms with more than 99 employees	5,249	0.20	0.40
Log of firm age	The log of the number of years since firm has been established	5,175	25.88	20.90
Log of manager's experience	The log of the number of years that a manager worked in the industry in which s/he is currently employed	4,966	22.77	12.49
Foreign-owned company	A dummy variable that takes 1 if more than 50% of a firm is owned by foreign investors	5,250	0.07	0.25
Public company	A dummy variable that takes 1 if a firm is publicly traded	5,096	0.04	0.20
Government officials ask for bribes	A dummy variable that takes 1 if a firm is asked or expected to make an informal gift or payment by government officials when it request services such as new business license, renewal of license, electricity connection etc. from government offices	1,200	0.14	0.35
Financial constraint	A dummy variable that takes 1 if access to finance is a major or a very severe obstacle for a firm	4,820	0.25	0.43
Export	A dummy variable that takes 1 if a firm directly exports its products	5,243	0.24	0.43
Quality certificate	A dummy variable that takes 1 if a firm has an internationally-recognized quality certification such as ISO and HACCP	5,047	0.21	0.41
Temporary employees	The ratio of temporary employees to total employees	5,192	0.12	0.23
Court Impartiality	The court system is fair, impartial and uncorrupted (4 point Likert scale from strongly disagree to strongly agree)	4,856	2.05	0.98

TABLE 4: Pairwise correlation matrix

		1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1	**Bribes**	1														
2	**Investments**	-0.053	1													
3	**Public (private baseline)**	-0.003	0.08	1												
4	**Foreign owned (domestic baseline)**	-0.009	0.093	0.018	1											
5	**Medium size (small firm baseline)**	-0.002	0.045	-0.026	-0.028	1										
6	**Large size (small firm baseline)**	-0.037	0.296	0.104	0.196	-0.395	1									
7	**Log of firm age**	-0.079	0.098	-0.02	0.017	0.035	0.212	1								
8	**Access to government resources**	0.041	0.048	0.026	0.037	0.01	0.023	0.015	1							
9	**Log of manager's experience**	-0.002	-0.001	-0.063	-0.092	0.045	-0.033	0.278	0.002	1						
10	**Government officials ask for bribes**	0.227	0.122	0.016	0.02	0.022	0.107	-0.118	0.079	-0.079	1					
11	**Quality certificate**	-0.062	0.22	0.1	0.205	0.006	0.33	0.127	0.009	-0.029	0.073	1				
12	**Financial constraint**	0.041	-0.049	-0.059	-0.044	-0.004	-0.098	-0.038	-0.075	-0.011	0.101	-0.057	1			
13	**Export**	-0.049	0.147	0.012	0.141	0.007	0.323	0.151	-0.027	0.031	0.081	0.34	0.012	1		
14	**Temporary employees**	0.05	-0.03	0.017	0.007	-0.039	-0.019	-0.065	-0.01	-0.017	0.022	0.009	0.022	0.038	1	
15	**Court impartiality**	-0.079	0.043	0.034	0.045	0.007	0.077	0.043	0.043	-0.018	-0.176	0.046	-0.054	-0.004	-0.041	1

TABLE 5. Regression results: Investments on bribes.

	OLS		IV			
	1.a	1.b	2.a	2.b	2.c	2.d
Bribes	-0.033[+]		-0.113**	-0.092*		
	(0.019)		(0.044)	(0.038)		
Lagged bribes		-0.040**			-0.089**	-0.140 *
		(0.013)			(.020)	(0.062)
Public (private baseline)	0.435	1.240 **	0.430	0.169	1.189 **	1.200 **
	(0.504)	(0.456)	(0.372)	(0.244)	(0.220)	(0.297)
Foreign owned (domestic baseline)	0.851*	1.063**	0.847*	0.942**	1.032 **	1.037**
	(0.370)	(0.344)	(0.350)	(0.298)	(0.184)	(0.254)
Medium size (small firm baseline)	1.890**	.942 **	1.889 **	2.187 **	.914**	0.773 **
	(0.217)	(0.234)	(0.362)	(0.378)	(0.221)	(0.171)
Large size (small firm baseline)	4.266**	2.453 **	4.267**	4.907 **	2.453 **	2.299**
	(0.273)	(0.272)	(0.274)	(0.281)	(0.127)	(0.131)
Log of firm age	-0.209	0.070	0.188*	-0.021	0.078	0.132
	(0.122)	(0.141)	(0.095)	(0.152)	(0.124)	(0.150)
Log of manager's experience	0.185	0.156	-0.211	0.308 **	0.134	0.048
	(0.143)	(0.143)	(0.149)	(0.118)	(0.142)	(0.102)
Year dummy	Yes		Yes	Yes		
Industry and Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.170**	10.926**	7.183**	7.922**	11.081**	11.605 **
	(0.578)	(0.642)	(0.435)	(0.396)	(0.477)	(0.500)
R^2	0.43	0.59	0.43	0.34	0.58	0.59
Test of excluded instrument in the first stage			$F(1,12)=31.6$	$F(2,12)=19.1$	$F(1,11)=138.9$	$F(2,11)=6.6$
Shea's adjusted partial R^2			0.21	0.23	0.19	0.03
Observations	2,312	755	2,312	2,229	755	642

Notes: Robust standard errors in parentheses clustered by country. The instrument variable is average bribes for industry-country-year in all columns except in columns 2b and 2d. In these two columns, we introduced the second instrument, court impartiality together with the average industry-country-year bribes paid.
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

TABLE 6. Bureaucrats' requests for bribes and firms' responses

	Firms pay bribes		
Government officials ask for bribes	No (%)	Yes (%)	Total (%)
No (%)	76	9	85
Yes (%)	7	8	15
Total (%)	83	17	100

TABLE 7. Regression results: Investments on financial constraint and bribes paid

	Investments in fixed assets
Financial constraint	-0.037
	(0.216)
Financial constraint and bribes	0.035
	(0.053)
Bribes	-0.037[+]
	(0.019)
Public (private baseline)	0.452
	(0.516)
Foreign owned (domestic baseline)	1.054**
	(0.287)
Medium size (small firm baseline)	1.966**
	(0.229)
Large size (small firm baseline)	4.160**
	(0.273)
Log of firm age	-0.157
	(0.135)
Log of manager's experience	0.195
	(0.144)
Year, Industry and country dummies	Yes
Constant	7.133**
	(0.643)
R^2	0.44
Observations	2,181

Notes: Robust standard errors in parentheses clustered by country
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

TABLE 8. Regression results: Bribes and the interaction of lagged bribes and lagged investment

	Bribes (log transformed)
Lagged investment and lagged bribes	-0.010[+]
	(0.005)
Lagged bribes	0.210*
	(0.087)
Lagged Investment	-0.004
	(0.028)
Public (private baseline)	-0.688
	(0.578)
Foreign owned (domestic baseline)	-0.699*
	(0.306)
Medium size (small firm baseline)	-0.584
	(0.383)
Large size (small firm baseline)	-1.055*
	(0.469)
Log of firm age	-0.355
	(0.257)
Log of manager's experience	-0.070
	(0.230)
Industry and country dummies	Yes
Constant	-12.311**
	(1.219)
R^2	0.17
Observations	1,010

Notes: Robust standard errors in parentheses clustered by country
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

TABLE 9. Probit: Granger causality of export vs. paying bribes

	Likelihood of Exporting	Likelihood of Exporting[7]	Likelihood of paying Bribes
Lagged export (dummy)	1.761**	1.769 **	-0.208
	(0.103)	(0.112)	(0.154)
Lagged bribes (dummy)	0.122	0.072	0.726**
	(0.137)	(0.155)	(0.156)
Public (private baseline)	0.377*	0.233	-0.170
	(0.178)	(0.196)	(0.262)
Foreign owned (domestic baseline)	0.034	0.114	-0.523*
	(0.228)	(0.253)	(0.209)
Medium size (small firm baseline)	0.367**	0.385**	-0.259
	(0.112)	(0.121)	(0.135)
Large size (small firm baseline)	0.729**	0.706**	-0.518**
	(0.128)	(0.139)	(0.199)
Log of firm age	0.002	0.061	-0.086
	(0.068)	(0.072)	(0.100)
Log of manager's experience	0.012	-0.039	-0.059
	(0.071)	(0.078)	(0.095)
Industry and country dummies	Yes	Yes	Yes
Constant	-1.425**	-1.525**	0.622
	(0.313)	(0.336)	(0.397)
Log pseudolikelihood	-465.80	-404.49	-272.61
Wald chi2	471.01**	479.06**	163.67**
Observations	1,372	1,116	1,116

Notes: Robust standard errors in parentheses clustered by country
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

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[7] This column is an estimation by restricting the number of observation of the likelihood of exporting to be equal to number of observation we have for with the likelihood of paying bribes.

TABLE 10: Probit: Likelihood of getting quality certification on bribes

	Likelihood of getting quality certificate
Bribes(dummy)	-0.019*
	(0.008)
Public (private baseline)	0.418**
	(0.129)
Foreign owned (domestic baseline)	0.572**
	(0.101)
Medium size (small firm baseline)	0.675**
	(0.068)
Large size (small firm baseline)	1.293**
	(0.080)
Log of firm age	0.045
	(0.052)
Log of manager's experience	-0.028
	(0.040)
Year, industry and country dummies	Yes
Constant	-1.257**
	(0.192)
Log pseudolikelihood	-1,401.46
Wald chi2	540.98**
Observation	3,219

Notes: Robust standard errors in parentheses clustered by country
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

TABLE 11: Regression results: Proportion of temporary employees on bribes

	OLS
Bribes (dummy)	0.024[+]
	(0.013)
Public (private baseline)	0.008
	(0.015)
Foreign owned (domestic baseline)	0.002
	(0.012)
Medium size (small firm baseline)	-0.028*
	(0.011)
Large size (small firm baseline)	-0.014
	(0.014)
Log of firm age	-0.003
	(0.005)
Log of manager's experience	0.010
	(0.006)
Year, industry and country dummies	Yes
Constant	0.132**
	(0.022)
R^2	0.03
Observation	3,320

Notes: Robust standard errors in parentheses clustered by country
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

APPENDIX

TABLE 1a. Regression results: Firms' likelihood of survival on lagged bribes

	Survival
Lagged bribes	-0.002
	(0.004)
Medium size (small firm baseline)	0.102
	(0.153)
Large size (small firm baseline)	0.077
	(0.209)
Log of firm age	0.117[+]
	(0.065)
Industry and country dummies	Yes
Constant	1.093*
	(0.513)
Pseudo R2	0.10
Observations	551

Notes: Robust standard errors are in parentheses clustered by country. Survival represents the inclusion of firms in the two consecutive surveys undertaken by the World Bank. Payment of bribes indicates whether firms in the first survey reported that they paid bribes to government officials to get things done.
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

TABLE 2a. Regression results: Antecedents of Paying bribes with different specifications

	OLS	Tobit	Probit
Public (private baseline)	-0.906*	-0.899	-0.436*
	(0.421)	(0.580)	(0.220)
Foreign owned (domestic baseline)	-0.753*	-0.562+	-0.251[+]
	(0.380)	(0.336)	(0.137)
Medium size (small firm baseline)	0-.133	-0.080	-0.024
	(0.229)	(0.166)	(0.068)
Large size (small firm baseline)	-0.509+	-0.506*	-0.204*
	(0.264)	(0.228)	(0.095)
Log of firm age	-0.272+	-0.189*	-0.068+
	(0.143)	(0.085)	(0.038)
Log of manager's experience	0.118	0.130	0.026
	(0.140)	(0.106)	(0.045)
Year, industry and country dummies	Yes	Yes	Yes
Constant	-11.709**	-1.646**	-0.533**
	(0.645)	(0.437)	(0.182)
R2/Pseudo R2	0.18	0.12	0.20
Observations	3,352	3,352	3,352

Notes: Robust standard errors in parentheses clustered by country
[+]Significant at 10%. * Significant at 5%. ** Significant at 1%.

Table 3a. Regression results: The effect of paying bribes on short term outcomes (access to government resources)

	Probit	*IV Probit*
	1.a	1.b
Bribes	0.127**	0.108*
	(0.042)	(0.046)
Public (private baseline)	0.192	0.176
	(0.327)	(0.325)
Foreign owned (domestic baseline)	0.234	0.220
	(0.249)	(0.248)
Medium size (small firm baseline)	0.018	0.015
	(0.123)	(0.123)
Large size (small firm baseline)	0.091	0.091
	(0.158)	(0.157)
Log of firm age	0.128*	0.123^{+}
	(0.064)	(0.064)
Log of manager's experience	0.100	0.102
	(0.071)	(0.071)
Year, industry and country dummies	Yes	Yes
Constant	0.504^{+}	0.551^{+}
	(0.297)	(0.297)
Log pseudo likelihood	-321.88	-5,321.64
Wald test of exogeneity (p-value)		0.31
Observations	1,673	1,673

Notes: Robust standard errors in parentheses clustered by country
$^{+}$Significant at 10%. * Significant at 5%. ** Significant at 1%.

CHAPTER 2

THE ADVANTAGE OF AFFILIATION WITH BUSINESS GROUPS: ECONOMIZING OR RENT SEEKING? EVIDENCE FROM THE *ARAB SPRING*

INTRODUCTION

Business groups, a collection of legally independent firms bound together by block shareholders, are common around the world (Morck, and Steier, 2007). The prevalence of business group, especially in countries where corruption is pervasive, market supporting institutions are less developed, shareholders rights are less protected and corporate governance is less transparent has led scholars to ask what really causes this organization form to emerge and persist, and what its contribution is to an economy. Review of studies arguably demonstrates that group affiliation is positively related to performance in many emerging economies(Khanna and Yafeh, 2007; Carney, Gedajlovic, Heugens, Essen, and Oosterhout, 2011). However, the mechanism by which this manifests is far from clear (Morck, and Steier., 2007). Some scholars attribute the positive association to the *value adding* (economizing) role whereby groups substitute the weak markets by reducing information asymmetry and transaction costs among affiliates and with outside partners (Khanna and Yafeh, 2007; Chang and Hong, 2000). In contrast, some other studies show that business groups are mechanisms by which rent is garnered through political connection (Fisman, 2001; Morck and Yung, 2004).

Therefore, it is not clear how and under what conditions do business groups play *value adding* or rent seeking role and benefit their affiliate firms. If business groups play economizing role, they fill the weak product and factor market by mustering and allocating scarce financial, human capital, as well as intangible resources such as technology and reputation for firms within a group (Chang and Hong, 2000). On the other hand, if they play a rent seeking role, they establish political connections and benefit member firms by providing regulatory oversights, protection from new entrants in their industries, privileged deals from government owned banks, and other regulatory enterprises. To date, there are very few studies that aim at identifying which of these two are the prevailing sources of rent for group affiliated firms. There are a number of reasons for this. First, , the establishment of business groups is specific

to the socio-cultural and political contexts of countries. Accordingly it is difficult to generalize their role as *value adding* or rent seeking (e.g. Khanna and Yafeh, 2007, Carney *et al*, 2011). Second, The role of business groups might not be restricted to either one or the other, it could be both. Third, methodologically, both *value adding* and rent seeking roles of business groups can lead to better performance of their affiliates. This creates an identification problem as to which of the mechanisms is at play for an observed firm performance.

Identifying the prevailing source of rent for group affiliated firms has both theoretical and policy relevance precisely because the two rent generation and appropriation strategies are profoundly different. The *value adding* strategy emphasizes on wealth creation while rent seeking emphasizes on wealth redistribution. As such, these strategies are different in the amount of value they create and their welfare implication.

Juxtaposing these two alternative mechanisms of rent creation and appropriation by business groups, this study aims at contributing to filling the gap by addresses the methodological challenge using a quasi-experiment. Recently, the *Arab spring* has swept many long serving presidents and political parties from power unconstitutionally. Among those countries, Egypt and Tunisia pioneered the change at the beginning of 2011. This quasi experiment helps untangle the two competing explanations. The assumption is that sudden government change (treatment) disrupts existing connections between politicians and businesses. This in turn thwarts rent gained from political connection. Any market irregularity associated with this change does not put business groups in a disadvantageous position as they are argued to be better to respond to weak markets.

Using a longitudinal data and Difference in Differences methods, I compare how affiliates of business groups perform before and after the treatment compared to two control groups. The results show that group affiliated firms are severely negatively affected than the control groups after the treatment. The negative effect is especially high for firms affiliated with family business groups. The implication is that political connection is the main rent appropriation mechanism by which group affiliated firms outperform their stand-alone counterparts in North Africa.

By untangling these alternative explanations this study provides both theoretical and practical

contributions. Theoretically, beyond, the obvious argument that institutions matter in the choice of firm strategies, this study sheds new light on the heterogeneous impact of institutions on rent appropriation mechanisms of stand-alone vs. group affiliated firms. More specifically, this study provides empirical evidence from North Africa that the high performance of group affiliated firms is derived mainly from political connections than from economizing in transactions, corroborating the *rent seeking hypothesis*. This evidence also informs the policy debate on the value of business groups as 'paragons or parasites'(Khana, 2000). Empirically, using a quasi-experiment, it tackles the identification problem of the mechanisms behind group affiliation and performance.

THEORY AND HYPOTHESES

Several theoretical perspectives have been adopted to explain the existence of business groups in emerging economies. The main ones are agency theory, transaction cost economics, resource based view, sociological or relational perspectives, and political economy perspectives (Khanna and palepu, 2000; Yiu, Lu, Bruton, and Hoskisson, 2007).

According to the agency theory, in emerging economies, market for corporate governance is weak. There is a high principal-principal agency problem (Dharwadkar, George, and Brandes, 2000; La Porta, Lopez-de-Silanes, Shleifer,and Vishny, 2000). Majority shareholders, tunnel resources from firms in which they have a lower ownership to firms they have a higher ownership by separating controlling and shareholding rights (Bertrand, Mehta, and Mullainathan. 2002; Claessens, Djankov, and Lang, 2000). This stream of literature focuses on how minority shareholders are expropriated by majority shareholders within a group. The analysis focuses on the differences in performance of firms only affiliated with business group. Consequently, it does not fit well to explain the average effect of affiliation to business groups on firm performance with respect to stand-alone firms.

The transaction cost economics and resource based view perspectives, on the other hand, posit that business groups are the right response to weak market institutions. When market supporting institutions are weak, firms can get various benefits from affiliating with business groups. First, affiliation reduces information asymmetry and provides access to imperfectly

marketed assets such as human and financial capital within the group (Khanna and Palepu, 1997, 2000; Chang and Hong, 2000). Second, groups serve as an alternative for portfolio diversification when investors have a very limited option to diversify their investment in the market (Chang and Hong, 2000). Therefore, since group affiliated firms have better access to imperfectly marketed tangible and intangible assets, they perform better. According to the sociological or relational based view, business groups are formed as a reflection of the norms and values of the society they are embedded. Group affiliation gives legitimacy, reduces transaction cost and positively affect performance (Kanna and Palepu, 2000; Yiu *et al.* , 2007; Granovetter, 1994). Even though, the sociological perspective differs from the other two with respect to why business groups come into existence, all these theories predict that business groups are value enhancing organization forms.

Distinct from the transaction cost or sociological perspectives, the political economy perspective posits that the main source of rent for business groups is political connection (Morck and Young, 2004; Fisman, 2001). Business groups are connected to governments by virtue of their structure as state controlled or through kinship and friendship ties between the ultimate owners and politicians. Political connection provides privileges such as regulatory oversight, protection from new entrants in their industries, and access to privileged deals from government owned enterprises. While there is a strand of literature in finance that estimates the value of political connection,(e.g. Faccio, Masulis, and McConnell, 2005; Amore and Bennedsen, 2013), minimal attention is given to understand the difference in the propensity of firms to establishing political connection. Departing from this literature, the theme of this study is investigating the difference in the propensity of firms in establishing and benefiting from political connection.

Review of theories that explain the existence of business groups suggest two competing perspectives on how group affiliation might lead to better performance: Groups as *value adding* or rent seeking entities. Using insights from the new institutional economics, two hypotheses that establish these competing mechanisms are developed. Before drawing on these competing hypotheses, following the earlier works, I establish the baseline hypothesis that in emerging economies affiliation has a positive impact on performance due to *value*

adding (Khanna and Palepu, 2000; Khanna and Palepu, 1997; Chang and Hong, 2000) or rent seeking role of business groups (Fisman, 2001).

H1. Group affiliated firms perform better than their non-affiliated counterparts

Affiliation to Business Groups as an Economizing Mechanism

The theory of new institutional economics suggests that social and political organizations of nations affect economic outcomes (North, 1991; Williamson, 2000). The two main formal underlying institutional conditions that affect the choice of the right organization forms and governance mechanisms are the property rights and contract enforcement institutions. Emerging economies are generally characterized by both weak property rights and contract enforcement institutions (Khanna and Palepu 1997; Acemoglu and Johnson, 2005). Transaction cost economics elucidates that while having the institutions right is a priority, choosing the right governance form is the second order economizing approach to cope with problems of weak contract enforcements (Williamson, 2000). Transactions that have similar attributes might best fit to different governance forms depending on the quality of contract enforcement institutions. The weaker the contract enforcement institutions, the more transactions are governed within a hierarchy than in a market (Williamson, 2000). In emerging economies, many intermediary institutions that facilitate contract enforcement are not well developed (Ahuja and Yayavaram, 2011; Khanna and Palepu, 1997). Lack of development of intermediary institutions in turn create a high information asymmetry and transaction cost across the boundary of a firm. By affiliation to groups, firms economize on transactions and improve (Khanna and Palepu, 1999; Khanna and Yafeh, 2007).

Sudden and unconstitutional government change creates a sharp break in the political institutions. Arguably, such a change might also affect market supporting institutions. Countries such as Egypt and Tunisia which experienced sudden government change at the beginning of 2011 in a relatively peaceful way have encountered some irregularities in the functioning of markets. For example, based on the World Development Indicators, the stock market value traded as a percentage of GDP, stock market turnover ratio, and stock market return have declined in 2011 as compared with the 2010 values. For example, in Egypt from 2010 to 2011 the stock market value traded as a percentage of GDP has decreased from 21%

to 12%, and stock market turnover ratio from 43% to 34%. Similarly in Tunisia the stock market turnover has reduced from 17.6% to 10.9%, stock market return from 39.7% to -10% and stock market volatility increased from 8.4% to 13%. Moreover, there is a reduction in the total credit provided to the private sector as a percentage of GDP. These indicators suggest that the financial market has not improved following the government change. Similarly, data from the World Governance Indicators (2013)[8] shows that institutions that facilitate contract enforcement, such as control of corruption, rule of law, and government effectiveness have been relatively worse after the government change. Although the decline in the financial market condition and quality of governance might not be very dramatic, the indicators did not show any improvement to reduce cost of transactions outside the boundary of the firm. If affiliation to a group is a substitute weak market supporting institutions, it might serve as a *shock absorber* that partially alleviates the negative effect of market irregularities during drastic political changes. When the external market is getting worse, affiliates of business groups have the alternative to use complimentary resources such as distribution channels, logistics, and slack financial as well as human resource including security from other affiliate firms to protect their firms from theft, plunder, in areas exposed to criminal activities during the instability. Moreover, being under the umbrella of an ultimate owner facilitates the mobilization of resources to resume operation after such instability. Despite the overall potential negative effect of instabilities during the sudden government change of firms, having such a privilege puts group affiliated firms in better position relative to stand-alone firms.

H2a. The negative effect of a political regime discontinuity is lower for group affiliated firms than for the non-affiliated ones.

Affiliation to Business Groups as a Rent Seeking Mechanism

Contract enforcement institutions govern the relationship between ordinary citizens (Acemoglu and Johnson, 2005). When firms anticipate contract enforcement problem with ordinary citizens, they have the option to internalize some of the transactions. Property rights, on the other hand, govern the relationship between ordinary citizens and the state. It mainly depends on the distribution of political power (Acemoglu, and Johnson, 2005). Weak

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[8] http://info.worldbank.org/governance/wgi/index.aspx#reports

property rights institutions expose ordinary citizens to expropriation by politicians and elites who have access to this power (Acemoglu and Johnson, 2005; North 1991). Unconstrained political power serves as a mechanism to transfer wealth from the majority to privileged minorities (politicians and elites). Transaction cost economics cannot predict the right solution to economize when the problem arises from vertical relationships (firm and state). When property rights institutions are weak, firms strategize to get access to political power on to reduce risk of expropriation by the government in the one hand and tunnel public properties into their private control on the other (Acemoglu and Johnson, 2005). By establishing political connections, firms influence policies, rules and regulations in their favor. This is a common scenario in emerging economies where both the economic and political institutions are at their infancy (Ahuja and Yayavaram, 2011).

The relevance of political connection might be conspicuous under certain conditions. First, when political power is centralized, connections established in the center will serve as a valuable social capital to deal with the respective government officials down the hierarchy (Shleifer and Vishny, 1993). Second, the effect of centralized political power on the motivation of firms to establish political connection is reinforced by the politicians longevity in power. Political connection with long serving politicians implies the long term returns from investing in political connections. Third, when the government has a strong presence in the economy to dispense benefits in the form of, for example, s of privatization, provision of loans returns from political connection is not trivial. All of these preconditions characterize countries in North Africa. Mubarak served 30 years as a president of Egypt, and Ben Ali served 27 years as a president of Tunisia, and in Morocco, the government is a constitutional monarchy where much of the executive and legislative authority is still in the hands of the king. The polity indicators show that political power is highly centralized and executives in these countries are less constrained and less subject to check and balance both vertically and horizontally[9]. Moreover, in these countries, government has a significant role in the economy. Despite the effort to privatize many firms, government still plays the main role in directly engaging in the production of goods and services (Biygautane and Lahouel, 2011; Adly, 2009). For example in Egypt by the end of 1980s public sectors produce more than 50% of

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[9] The annual polity score by Marshall, and Gurr, 2014, http://www.systemicpeace.org/polity/polity4x.htm

the industrial outputs and possess 90% of the banking and insurance sector (The Washington Post, 2011).

Arguably, given the institutional context, it is likely that many firms in these economies may find establishing political connections valuable. Given the same institutional environment, are business groups prone to engage and are successful in influencing governments than stand-alone firms? First, according to Khanna and Yafeh, (2007), in many emerging economies, business groups are formed by the government or are supported by the government as part of market liberalizing and privatizing government owned firms. Newly privatized firms maintain their connection with the government post privatization (Boubakri, Cosset, Saffar. 2008). If this is the case, since in North Africa many of the privatized firms were acquired by business groups, political connections might be maintained by these groups (The Washington post, 2011; Ahramonline, 2011; Bassiouni 2012). Second, business groups are often diversified and many in number. So they enjoy economies of scale from forging long term relation with the government since the same connections with the top politicians can serve many firms in different industries. Third, groups comprise many firms, their administration and structure is too intricate for politicians to regulate (Dieleman, and Boddewyn, 2012). Instead of expending efforts to regulate business groups, both the top politicians and groups tend to placate each other. Business groups connect with leading political parties and finance political elections; and politicians in turn devise rules and policies favoring the interest of firms affiliated with business groups (Herzog, Munir, and Kattuman 2013; Dieleman, and Boddewyn, 2012). Fourth, while affiliate firms benefit from connections established by the ultimate owner they are shielded from liability of defaults of any member firm as each of them are legally independent.

In North Africa, business groups had the opportunity to acquire privatized firms at lower price and with closed bids, access licenses and scare resource such as land for real estate development, and loan from government owned banks (The Washington post, 2011; Ahramonline, 2011; Bassiouni, 2012). Moreover, political connections also help business groups to benefit from subsidies and promotions provided by the government (Biygautane and Lahouel, 2011). Therefore, unconstitutional government change, leads business groups to

lose the benefit that they used to get.

H2b. The negative effect of a political regime discontinuity is greater for group affiliated firms than for the non-affiliated ones.

Finally, if H2b is empirically supported, I expect the following also to be true. Compared to other business groups owned by the state, widely held financial institutions or other widely held companies where at the apex the head of the group is a professional manager, family business groups may be more likely to be politically connected. This is because rich business families are likely to belong to the political elites with different kinds of ties, blood relation or other form of kinship. For example, among the business groups which were affected by the bad news release of Suharto's health condition, some were owned by his children (Fisman, 2001). Oligarchic families are rich enough to present tempting offers that are difficult for politicians to step back. Rich business families tend to be small in number; stays in the business for a long time, and interact many times with politicians; as a consequence they are in a better position to forge strong political connection than do other business groups (Morck, Wolfenzon and Yeung, 2005). Interviews of selected business groups in Egypt by Piesse, Strange, and Toonsi, (2011), points out that some family owned business groups are well positioned compared to other business groups to influence policy makers and government owned financial institutions to their benefit.

Corruption and squandering of public money by business families in both Tunisia and Egypt are among the top law cases that were brought to the court after the revolution. Anecdotal evidences from cases handled by courts mainly in Egypt and partly also in Tunisia reveal that privatization process has benefited some business groups especially family owned ones. Using close friendship with the presidents and their families and by affiliating to the leading political party, family business groups managed to get exclusive privileges in acquiring government companies during privatization process, access to credit from government owned banks, securing licenses and unduly influencing the approval and enforcement of anti-trust laws (Ahramonline, 2011; The New York Times, 2011).

Establishing strong political connection requires a long time commitment from being a mere political affiliate to establishing personal connections to the leading political figures. This

process might not sound realistic and even possible for a professional manager who is responsible to manage a business. The condition that facilitates the diversion of resources from government to private hands is partly due to an unclear boundary between the politicians and business elites[10]. Some of the business elites have served in higher government positions such as in the ministry, parliament, and special committee in the parliament. During this service years, business elites were not only influencing favors dispensed by the government, they themselves were in charge of dispensing benefits to firms as members of the government (Bassiouni, 2012; Roll, 2013).

H3. The negative effect of a political regime discontinuity is greater for firms affiliated with family business groups than for affiliates of other business groups and standalone firms.

METHODS
Research Context

The *Arab Spring* and Business groups in the Middle East and North Africa

Arab Spring has begun in Tunisia at the end of 2010. It is said to be instigated by the self-immolation of a street vendor, Mohamed Bouaziz, following the harassment and confiscation of his wares by a Municipal police. The revolution then has spread to Egypt, Algeria, Bahrain, Jordan, Libya, and others. However, only in four countries to date has the protest brought a change in regime. Libya, Tunisia, Egypt, and Yemen have succeeded in changing their leaders while Syria is still under civil war. The countries that pioneer the change and are thought to be less violent are Egypt and Tunisia. Zine al-Abidine Ben Ali, the former prime minister of Tunisia assumed top political positions in 1964. He took the premier position in October 1987 after the first prime minister of Tunisia after independence, Habib Bourguiba, was incapable of ruling the country for health reason (Encyclopedia Britannica, 2013). He was the head of the Democratic Constitutional Rally and won reelections from 1994 to 2010 with huge margins.

Following the 2010 protest against his rule, the president was ousted and is under exile in

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[10] Example of prominent figures in Egypt are Ahmad EZZ, steel tycoon, and member of the parliament and budget committee of the leading political party, Yasin Mansour, the head of Mansour group and a one time Minister of transport of Egypt. In Tunisia the indirect link of the Trabelsi family, (family of the wife of Zine al-Abidine Ben Ali).

Saudi Arabia. He and his family are convicted of crimes such as embezzlement of public property, violation of human rights, killing protesters, and smuggling of drugs, guns and other archeologically valuable articles (Encyclopedia Britannica, 2013).

Hosni Mubarak started his political career in 1972 when he was appointed by President Anwar el-Sadat as commander of the air force. In 1975 he was appointed as a vice president of Sadat. He became president of Egypt following the assassination of President Sadat in 1981 (Encyclopedia Britannica, 2013). Since then, he was reelected four times as a president and chairman of the National Democratic Party. The popular protest of 2011 made him relinquish his power. He is now under trial for allegations of corruption, abuse of power, and killing protesters. Both leaders won elections for more than four times and stayed in power for more than 20 years.

Middle East and North Africa (MENA) is suitable to study the role of business groups. In MENA ownership of listed companies is generally concentrated. The Biggest companies in the region are either owned by families or the government. A study by Omran and colleagues (2008), covering three countries, Egypt, Tunisia and Oman shows that only 14% of the firms have dispersed ownership while others are either controlled mainly by the government or individual investors (Omran, Bolbol, and Fatheldin, 2008). Family owned businesses are the backbone of the region's economy, both as small and large diversified firms. In this region, over 80% the businesses are owned or controlled by families (PricewaterhouseCoopers, 2012). Some families control large conglomerate businesses. Based on the Forbes top 100 Arab millionaires data, only the top 25 richest families in the region own 100 billion USD which is equivalent to 40% of the total market capitalization of all firms listed in all the stock markets in the region[11]. For example, in Egypt, 8 business families own a wealth 19.4 billion USD, equivalent to 34% of the market capitalization of the Cairo stock market. Four families in Morocco own a wealth of 6.7 billion which is about 12% of the market capitalization of the Casablanca stock market. Large family owned firms in the region are also characterized by active participation of the families in the management of their firms (Moreno, 2012).

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[11]This is a self-estimation based on the Forbes data and annual market capitalization data from the world bank. http://www.forbesmiddleeast.com/en/lists/read/2013/the-world-richest-arab/listid/36#.VDJd2fmSzTo

 Similarly, government owns a significant portion of firms in the region. Among the top 100 listed companies in the region, 45% of the market capitalization, 32 companies, are under the partial control of the government (Amico, 2012). Despite the effort to privatize many of the companies in the region since 1980s, the rate of privatization has been much slower than required. According to Amico, (2012),   state owned enterprises contribute half of the economic activity in the region. For example, in Egypt, many state owned firms are organized under holding companies to facilitate the privatization process. Each holding company in Egypt comprises 12 to 25 firms.

Data Sources

Data was collected and brought together from various sources. The accounting measure of performance data were collected from Thomson One. Ownership data were mainly collected from company annual reports and their Web Pages. It was also supplemented by direct ownership data from Thomson One and Mubasher online[12]. Moreover, firm diversification data was collected from the Credit Risk Monitor. In Morocco, getting the annual reports was relatively easy because they are available at the Casablanca stock market webpage http://www.casablanca-bourse.com/BourseWeb/Liste-Societe.aspx?IdLink=20&Cat=7.

Bringing together the data from these sources was challenging. In translating Arabic names into English, some of the alphabets were spelled differently. This difference was problematic to identify the names of the main shareholders and ultimate owners. A lot of effort was expended to crosscheck the names from each company's annual reports and company webpage to match it with the information from Mubasher online and Thomson One.

Definition of Variables

Business groups

Business groups are defined differently in various contexts. For instance, in the context of Chile shows that affiliation to business group is mainly based on ownership overlaps, interlocking directorates, and indirect equity ties while direct equity ties and family bonds are

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[12]Mubasher is the largest site that provides news coverage for firms listed in the Arab stock market

less relevant (Khanna and Rivkin, 2006). In contrast, in many other studies the existence of a controlling shareholder of at least two legally independent firms is a basis to identify group affiliated firms (Almeida and Wolfenzon, 2006; Belenzon and Berkovitz, 2012). Although these two measures may not be mutually exclusive, they do not necessarily fully overlap. The former measure captures the broader aspects of affiliation in a specific context but limits cross country analysis. The latter one overlooks the contextual nature of affiliation, but makes cross country comparison possible. For the sake of cross country comparison, in this study I followed the definition by Belenzon and Berkovitz, (2012).

Based on the data collected from the annual reports together with other supplemental sources, at the first stage of direct ownership, firms are identified as widely held or controlled by another firm or individual. This first stage helps identify if a firm has a controlling shareholder or is a stand-alone firm. In line with Almeida and Wolfenzon (2006), and Belenzon and Berkovitz, (2012), I identify the ultimate owner if a firm has a direct or indirect holding of at least 20% of the voting right for a listed company or 50% of the voting right for a private company. If a firm has no controlling shareholder or has a controlling shareholder which is a private company or an individual with no controlling ownership in any other company, this firm is considered as a stand-alone firm. Otherwise, if a firm has a controlling shareholder, company or individual, who has also a controlling voting right in another company; this company is considered to belong to a business group.

Family Business Groups

Based on their ultimate owners, groups are classified as family business groups if the ultimate owner is a family (a single entrepreneur or a family). The non-family business groups are those whose ultimate owner is a government, a widely held financial or non-financial company and other miscellaneous such as co-operations.

If the controlling firm is a listed company, identifying the ownership structure is relatively easy.
However, if the controlling shareholder is a private firm identifying the ownership is difficult. All the available data in the respective company webpage especially the section on the company's history was consulted to identify the ultimate owner. Moreover, more than one

annual report was consulted to identify the ultimate owner. In line with Faccio and Lang (2002), and Masulis, Pham, and Zein,(2011), when the ultimate owner of a group is a private company and it is not possible to identify the owner of that firm, the group is categorized as a family business group. This is not a particular problem for firms in Africa. Actually, Faccio and Lang, (2002), pointed out the same problem in identifying the ultimate owners of Western corporations and Masulis *et al.* (2011), in larger set of countries.

Return on assets

The dependent variable used to measure firm performance is Return on Assets (ROA). It is defined by the World Scope, the original source of Thomson One financial data, used in this study as follows. ROA= (Net Income before Preferred Dividends + ((Interest Expense on Debt-Interest Capitalized) * (1- Tax Rate))) / Average of Last Year's and Current Year's Total Assets * 100.

3.4. Empirical strategy

Selection of the treatment treated and control groups

From those countries that experienced the *Arab Spring*, Egypt and Tunisia are chosen for this study because in Yemen the change has happened very recently and that the effects are yet to be realized. Moreover, Yemen does not have a stock market. In Libya the government change was not peaceful; and the stock market was closed for a long time which makes getting data very difficult. Moreover, there are only about 10 companies listed on the stock market. Therefore, the sample for the study is limited to firms listed in the Cairo stock market in Egypt and that of the Tunis stock market for Tunisian companies. Besides, listed companies of Morocco are included as a control group.

This sudden unconstitutional and relatively peaceful change in the political system that reasonably dismantles political connection between firms and politicians is the main motivation for the choice of this setting for this particular study. Two important issues might be at stake to accept the sudden government change following *Arab Spring* as an identification strategy: the political connection capability of some firms, and potential endogeneity of the treatment.

First, one might consider that establishing political is a capability that some firms possess (Oliver and Holzinger, 2008). Those firms that were politically connected with the previous regime will also be able to establish similar relationship with the new regime. They have always the capability to reconnect with the new political regimes. While capabilities might not necessarily be dynamic and completely seamless to move from one situation to the other, political connection to the new regime in this particular case is less likely to happen for the following reasons. First given that the change is drastic, reconnecting with the new regime is difficult because the new regime takes time to ensure that firms which were allies of the former regime are trustworthy to work with. Second, once it is established, political connections like any other social capital requires longer time to be well cemented and give performance return. Therefore, the time frame used in this study is relatively short for firms with the political capability to establish valuable political connection and benefit from it.

Second, and perhaps most importantly, it is intuitive to think that the government change is not an exogenous shock. The rent seeking behavior of group affiliated firms in Egypt and Tunisia might be the driver for the government change. At this stage, it is important to make a clear distinction between the *Arab spring* and the sudden government change that is considered as a treatment. The popular uprising in the Arab countries has been attributed to many factors such as a mismatch between economic and population growth, poor income distribution, limited job opportunities, ethnic, sectarian and tribal differences as well as corruption and inefficient state sectors (Gurría and Schwab, 2011). As far as these factors are broad based and can be intertwined to broader socio-economic dynamics, it is hard to exclude the role of large companies outside the scene as it is equally hard to do it for any other factor. However, the interest here is to know if the behaviors of large companies and politicians in the treated countries are any different from other countries in the region to cause the sudden government change. Interestingly, countries that succeeded in changing their government in the region are neither major oil exporters nor kinship based states, which would have been major suspects for corruption and favoritism between politicians and business elites. In contrast, those countries that quell the protest without changing their government are oil rich and kinship based states (Brownlee, Masoud, and Reynolds, 2013). These differences between the two groups of counties seems to suggest that given the disenchantment by the people in

the region, the corrupt relationship between the business and political elites is the main driver for the government change.

Moreover, a study by Lagi, Bertrand and Bar-Yam, (2011), shows that the factor that triggered the government changes in those countries is not the long standing political failure. It is rather a sudden perceived failure of the regimes to respond to a sharp increase in the global food prices. They argue that while, for example, during the 2008 food price hike the government of Egypt was successful to respond to the food crisis by increasing subsidy, it failed to do so adequately in 2010.

And finally, to understand better if the corporate governance of firms in Egypt and Tunisia is worse than firms in other countries with similar socio-economic context, I compared the quality of corporate governance of firms in Egypt and Tunisia with respect to those firms located in Morocco. The World Economic Forum ranks the level of firm ethics, level of investors' protection, and corporate governance of firms around the world. Table 1 presents the summary of these indicators. A comparison of the ethical behavior, strength of auditing and reporting standard, and strength of investors' protection among firms in the three countries for three years show that there is no statistically significant difference between firms in the treated countries as compared with firms in Morocco. This is consistent with the above evidences that the sudden government change is exogenous.

Insert table 1 about here

To analyze the effect of the treatment, comparison is made between group affiliated firms in the treated countries with two control groups. The first control group is stand-alone firms in the treated countries. The second control group is group affiliated firms in Morocco. These firms are located in the same political, cultural and geographic region, but did not experience the government change. Comparing affiliated firms with that of stand-alone firms in Egypt and Tunisia allows identifying if business groups are prone to rent seeking behavior as compared with stand-alone firms in the treated countries. The second control group helps to confirm that the result observed by comparing group affiliated and unaffiliated firms in the treated countries is not because of any other unobserved change in the business environment

within the region that affect the performance of firms particularly group affiliated firms.

In 2010, there are a total of 350 companies listed in the stock market of the three countries with a total market capitalization of 161 billion USD.

With these two control groups the two baseline models are defined as follows

$$Y_{it} = \beta o + \beta_1 Dbg + \beta_2 DDbg + \eta_T + + \gamma t + \partial_I + \delta X_{it} + \alpha_c + \mu_{it} \qquad 1$$

$$Y_{it} = \beta o + \beta_1 Dbg_t + \beta_2 DDbg_t + \eta_T + + \gamma t + \partial I + \delta X_{it} + \alpha c + \mu_{it} \qquad 2$$

Y_{it} is the accounting measure of performance (ROA) of firm i at time t,. The performance data is collected on quarterly[13] basis from the first quarter of 2005 to the second quarter of 2012. There are a total of 30 quarters of which 24 are measures before the treatment and 6 after the treatment.

In the first model, the control group is standalone firms in the treated countries. D is a dummy that indicates if the firm belongs to a business group. DD is interaction of a dummy for the treatment and being an affiliate of a business group. It is the difference in differences which shows if being a group affiliate after the treatment has any effect on their performance.

$_T$ is a dummy variable for the treatment effect

$_C$ is a dummy variable for country

t is a dummy variable for quarters

I is a dummy for industry with two digit SIC code

X_{it} are time varying firm level controls specifically firm size (log of assets), level of firm diversification, if a firm is owned by a foreign investor (company) and the log of firm age

μit is the error term.

In the second model, the control group is group affiliates in Morocco. Therefore, Dbg_t is a dummy variable that shows if a group affiliate belongs in the treated countries (Egypt or Tunisia). $DDbg_t$ is a dummy variable that indicates whether a group affiliate is in the treated countries after the treatment and other controls are the same as in the first model.

In the second stage, I tested whether affiliates of family business groups are affected more than other firms due to the treatment. Therefore, two dummies are included. One dummy for

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[13] Quarterly financial data are available only for Egyptian companies but for Tunisia and Morocco there are only semi-annual financial data

affiliation with family business group (Dfbg) and another for being an affiliate of family business group after the treatment(DDfbg) while keeping group affiliation dummies. Moreover, a dummies for being a family firm(Dfb) and a family firm after the treatment(DDfb) are included together with other controls of the baseline model.

$$Y_{it} = \beta o + \beta_1 Dbg + \beta_2 DDbg + \beta_3 Dfbg + \beta_4 DDfbg + \beta_5 Dfb + \beta_6 DDfb + \eta_T + \alpha c + \gamma t + \partial_I + \delta X_{it} + \mu_{it} \quad ..3$$

$$Y_{it} = \beta o + \beta_1 Dbg_t + \beta_2 DDbg_t + \beta_3 Dfbg_t + \beta_4 DDfbg_t + \beta_5 Dfb_t + \beta_6 DDfb_t + \eta_T + \alpha_c + \gamma_t + \partial_I + \delta X_{it} + \mu_{it} \quad 4$$

And finally in a third model instead of analyzing the effect of the treatment on the treated by considering one control group at a time, both controls are included and a triple DDD is estimated. By including both control groups simultaneously, it is possible to parcel out any general trend that is affecting the performance of group affiliated firms other than the treatment and any other effect that impacted firms' performance in the treated countries.

 Estimation of difference in differences model with panel data using ordinary least squares has limitations due to error correlation within and across panels, causing an underestimation of standard errors and ultimately biased and inefficient estimates (Bertrand, Duflo, and Mullainathan., 2004; Peteresen, 2009). Peteresen suggested that in the presence of both time and firm level correlation of errors, one option is to address one of them parametrically by including dummies and cluster on the other dimension. In this paper, time dummies with feasible generalized least squares (FGLS) are used. FGLS is more efficient and less biased than OLS when there are correlations of errors within and across panels and that the error correlations are time invariant (Peteresen, 2009).   The test of serial correlation and heteroskedasticity suggests the use of FGLS adjusted for cross-sectional heteroskedasticity and panel-specific auto regression. On top of the FGLS, firm fixed effect OLS robust to hetroskedasticity with errors clustered by business group id is used as robustness check.

RESULTS

Descriptive statistics

A total of 276 firms with data on ownership and accounting measures of performance were found of which a total of 174 firms are from Egypt, 67 are from Morocco and the remaining

35 companies are from Tunisia. Since all the 267 firms are not listed in the stock market or show their performance from the beginning of the data point, the panel is unbalanced.

Insert table 2 about here

As table 2 illustrates, there are about 3100 firm-quarter observations of which 67% are group affiliated. A larger portion of the business groups is either family owned (34%) or government owned (20%). Of the total number of group affiliated firms more than 50% are family owned, about 35% are government owned and the rest are owned by widely held financial institutions, corporations or cooperatives. Table 3 shows the bivariate correlation of the variables.

Insert table 3 about here

In an ideal experiment, the control and the treatment group are randomly assigned to the experiment so that any effect that is observed after the treatment will be fully attributed to it. In a quasi-experimental setting, like this, the control groups with which comparison is made might not have the same feature as the experiment group. Table 4 and 5 compare the attributes of the two control groups with affiliates of the treated business group.

Table 4 shows the comparison of the attributes of stand-alone firms with respect to affiliated firms in the treated country. Comparison of the average measure of firm age, size, ROA and level of diversification show that there is a significant difference between the two types of firms. Stand-alone firms are older, smaller, and less diversified, but the difference in their ROA is not statistically significant. Many of the differences in the attributes of stand-alone and affiliated firms are in line with former studies by Khanna and Rivkin (2001) in the context of India, Chile, and others except that in these countries unlike in others, stand-alone firms are older than firms affiliated with business groups.

Insert table 4 about here

Table 5, compares affiliates of the treated groups with the control groups in Morocco. The table shows that affiliated firms in Morocco on average are older and larger both in terms of sales and total assets than affiliates of the treated groups. However, there is no significant difference between them in terms of the level of diversification and ROA. The differences observed between firms affiliated with the treated business groups with respect to the stand-alone firms and affiliates of the control groups suggest the need to go beyond testing the simple difference in difference.

Insert table 5 about here

The Effect of the treatment on the performance of firms affiliated with the treated groups

Table 6 presents the mean difference in ROA between firms affiliated with the treated business groups with that of the control groups. Columns 1a to 1c show the mean and the mean difference between stand-alone and affiliates of business groups in their ROA before and after the treatment. The result shows that affiliated firms have a higher ROA before the treatment and lower ROA after the treatment as compared with the stand-alone counterparts, even though in neither of the cases the difference is statistically significant.

In the same table, columns 2a to 2c show the mean and the mean difference in ROA between the affiliates of control and treated business groups. The result shows a similar pattern with that of columns 1a-1c. There is an overall drop in the profitability (ROA) of both the treated and the two control groups. However, the qualitative impact seems higher for firms affiliated with the treated groups, although that does not show up in the statistical test. The result shows that there is an overall drop in profitability of firms in all the three countries after the *Arab spring*.

A simple Difference in Difference regression, without including any other control, in the last

row of the table confirms that affiliates of the treated business groups perform significantly worse than their stand-alone counterparts as well as the control groups of Morocco. Since there are differences in the observable characteristics of the treated and both of the control groups, a multivariate model estimate is presented in table 7 and 8 by including controls of those important firm characteristics, industry, time and country dummies.

Insert table 6 about here

Table 7 depicts the effect of the treatment on ROA of group affiliates and family group affiliates. Column 1a and1b, present a Feasible Generalized Least Square Estimation and column 2 in the same table shows the firm fixed effect estimate of the treatment on ROA. In the regression all the firm level characteristics that make stand-alone firms significantly different from affiliate firms are included as controls.   All these controls except firm diversification have a positive effect on ROA. Additionally, controls for industry, country and time dummies are included. Since the performance measures are collected on quarterly basis, the dummies for time are quarters.

Supporting Hypothesis 1 and in line with previous studies, the result in column 1a shows that affiliation with business groups positively contributes to ROA. Being an affiliate of a business group increases ROA by 0.016 which is equivalent to 20% of the average return on assets. However, affiliated firms are not significantly negatively affected than stand-alone firms due to treatment. Column 1b shows that affiliation with family groups increases ROA by 0.014 (17.5%) of the average ROA. The treatment has a significant negative effect on the ROA of the family groups affiliates than to stand-alone firms. The ROA of family affiliated firms has reduced by 6% of the average ROA. The negative effect of the treatment remains significant for affiliates of family business groups in the firm fixed effect model as well.

Insert table 7 about here

Table 8 presents the effect of the treatment on affiliates of Tunisian and Egyptian business groups with respect to those in Morocco. The first two columns, 1a and1b, show that group

affiliated firms in the treated countries have higher profitability than affiliates of business groups in Morocco. After the political change, affiliates of business groups in the treated countries are performing less than affiliates of business groups in Morocco. Similarly, family business groups of the treated countries have higher profitability than those in Morocco. But these affiliates become less profitable than Moroccan family businesses after the treatment. This result is corroborated in the firm fixed effect model as well (column 2 of table 8) supporting the third hypotheses.

Insert table 8 about here

Finally, I estimated a triple Difference in Differences in Differences to identify the effect of being a group affiliate in the treated countries after the treatment controlling for being an affiliate of a business group, being an affiliate of a group in the treated countries, being an affiliate after the treatment, and other firm controls, time, industry and country dummies. This way, any general trend that is affecting the performance of firms affiliated to business groups other than the treatment and any other effect that impacted firms' operation in the treated countries are parceled out. Table 9 depicts this result. As the table shows in both models, affiliation to a business group both in the treated and the control countries and being an affiliate to the group after the treatment does not have any effect on ROA. In contrast, being an affiliate to a family business group has a positive impact on ROA and that affiliates of family business groups are negatively affected after the treatment in the treated countries. This result is supported in both models.

Insert table 9 about here

To summarize, as documented in previous studies the effect of affiliating with business groups is generally positive also in the context of the Middle East and North Africa. However, this effect swabbed once the family business group dummy is included in some of the results. The two alternative mechanisms by which affiliation helps firms to perform better, namely political connection or rent seeking on the one hand and bridging the missing market in *value*

adding ways on the other are tested using Difference In Difference methodology. Results show that the sudden change of political leaders in North Africa has negatively affected the performance of group affiliated firms. This effect is particularly pronounced for family group affiliates, supporting hypothesis 2b. The positive effect of affiliation to a family business group and the negative effect of the treatment on affiliates of this group are significant in both of the control groups' model, supporting hypothesis 3.

 Results from table 7-9 show that despite a reduction on performance of firms affiliated to family business groups after sudden government changes, their overall performance is not worse than non-family affiliated and standalone firms. This indicates that family affiliated firms are not inefficient compared with other firms despite interruptions of rents from political connection.   Considering that the loss in performance after the government change is as a result of interrupted returns from political connection, I compared how much of the effect of family group affiliation on performance comes from political connection and from filling the missing market. Results in table 7, 8, and 9 suggests that the higher performance of family group affiliated firms comes from both filling the missing market and from political connection. However, arguably, the share of return from political connection is higher than its economizing(substituting the missing market) role.

ADDITIONAL ANALYSIS AND ROBUSTNESS CHECKS

How does sudden government change affect the performance of group affiliated firms?

As it is evident from the analysis, the existence of political connections by firms affiliated to groups is not directly measured. The fact that observing a negative effect of affiliation particularly with family business groups after the treatment using each control group independently and simultaneously in the empirical strategy deduces the propensity of these firms to establish political connections and effectively utilize it to extract rent. To substantiate this finding and pin down the rent seeking hypothesis further additional analysis is made.

If the lower performance of group affiliated firms following the political change is due to the interruption of rent these firms used to secure from the government, the effect should be significantly higher for those which are operating in highly regulated industries. So I tested if

family group affiliated in regulated industries in the treated countries are severely affected than others operating in the less regulated industries after the treatment. I used a proxy developed by the World Bank group Investing Across Boarders (IAB) indicator to measure degree of regulation. IAB measures the restriction on foreign equity ownership across industries. The restriction on foreign investors' ownership is an industry level regulation that aims at protecting domestic firms against competition. Protecting selected industries from foreign investors' competition can be considered as one way of rent appropriation by domestic firms. Using this indicator, I classified industries as regulated if there is a restriction of foreign ownership investment in an industry and unregulated if there is no such restriction. Then I tested if family business groups in the regulated industries were highly affected after the government change. As table A. in the Annex shows, indeed, firms affiliated with family business groups in these industries were severely affected. This further corroborates the existence of rent from political connection by family business groups.

Moreover, the fact that affiliates of business groups or family business groups have been dramatically affected by the government change might not necessarily imply rent seeking behavior. Businesses groups might be structurally rigid and ill-suited to respond to changes as swiftly as single firms. So they are victims of the change for other things not related to political connection. If this is the case, group affiliated firms, regardless of whether the ultimate owner is the state or family, should be equally negatively affected. To test this, compared the extent to which state controlled group affiliates and family controlled group affiliates are affected by the government change. As table D in the annex shows, firms affiliated to government owned business groups are not affected by the government change. It is an indication that the lower performance of group affiliated firms is less to do with maladaptation of these firms to sudden changes and instabilities. Whereas connections established by family business groups with the previous government have perished with the ousted political leaders, firms affiliated with state controlled business groups, by virtue of the ownership structure, have still maintained their political connection.

It might also be that group affiliated firms have engaged in those industries that are highly affected by the government change. While this could be true, it is difficult to differentiate the

low performing industries after the government change from the loss of benefits by business groups from the previous government. However, I chose the tourism sector that shrank very dramatically after the government change. According to the African Development Bank (2012) the tourism sector is the most affected sector in the two countries during the *Arab spring*. The sector has shrunk from a growth rate of 13.9% in 2010-2011 to -8.6% in 2011-2012. The decline in overall contribution of this sector is not caused by the 'rent seeking' behavior of business groups. It is rather because tourists are not travelling for security reasons to these countries. As table C in the annex indicates, on average, there is no difference in the number of group affiliated firms with respect to other firms in the treated countries in their engagement in the tourism sector. This is an indication that the negative effect of the change to firms with family business groups is not due to their engagement in those sectors that are highly affected by the change.

Robustness checks

Difference in Difference method assumes that there is a common trend in the performance of firms affiliated to business groups and stand-alone firms. If for instance the performance of firms affiliated to business groups is declining before the treatment, the significant effect of the treatment might be wrong. To tackle this, I tested for a placebo treatment a year before the actual treatment. Table B, in the annex, shows that the placebo treatment does not have any effect on the overall performance of firms. The performance of affiliated firms has not declined after the placebo treatment.

The data used to track affiliation to business groups is based on ownership data since 2009. The performance data on the other hand begins from the first quarter of 2005. Therefore, there could be a change in status of firm's affiliation to groups from 2005 to 2009. Using a merger and acquisition data from Zephyr, I looked into the merger and acquisition deals made from 2005-2010 for the three countries. Except for a single firm in Egypt, the ultimate owner of any firm in my data has not been changed during this period in a way that affects the results. So excluding that single firm does not have any qualitative effect on the results.

In identifying the ultimate owners of business groups, similar to the former studies, I have classified those groups whose ultimate owner is a private company as a family business

group. The percentage of firms assigned in this way accounts around 3.4% of the total observation which is equivalent to the one by Masulis *et al.* (2011). However, the results remain qualitatively the same with the exclusion of these observations.

DISCUSSION

Previous works, many in developed economies, have documented that the performance of firms is driven by industry, year, corporate parent and business segment effects (McGahan, and Porter, 1997, 1999; Rumelt, 1991). Later, similar studies in emerging economies documented that the performance of firms is also affected by affiliation with business groups (Khanna and Palepu, 1997). Broadly, there are two theoretical perspectives that are used to explain the persistent heterogeneity in firms' performance, *value adding* (economizing) and rent seeking (strategizing) (Williamson, 1991). Rent seeking and *value adding* roles might have similar implications at the firm level, but their implication on the long term competitive advantage of firms and their welfare implications are different. The *value adding* role illuminates that the heterogeneity in firm performance and its persistence overtime comes from the difference in allocative and productive efficiency among firms (e.g. Williamson, 1991). In contrast rent seeking perspective accentuates that the persistent heterogeneity in firm performance is the result of firms' strategies to persuade government policies and regulations to their favor and acquire *influence rent* (e.g. Williamson, 1991; Ahuja and Yemirman 2011; De Figueiredo, 2009; Capron and Chatain, 2008; Hilman et al. 2004). Using a quasi-experiment and the two competing theoretical explanations, this study shed new light on how affiliation with business groups contributes to firm performance. More importantly, between the two mechanisms, the empirical result corroborates the rent seeking hypothesis. If business groups generate rent in *value adding* ways by filling the *'missing market'*, the negative effect of the treatment in Tunisia and Egypt should have a lower impact on the performance of group affiliated firms than to stand-alone ones. Nonetheless the empirical evidence shows that they are significantly and negatively affected than the control groups. It appears that group affiliated firms effectively utilize their political connection to appropriate rent that government dispenses through its policies, regulations, subsidies and supports.

As argued by Williamson (1991) while strategizing (rent seeking) and economizing might

have similar outcomes at the firm level, economizing outcomes are superior with respect to their welfare implications. Firms which gain their rent via political connection capture a larger portion of the value they create than they could through economizing. This in turn makes rent seeking firms to create less value than economizing firms at equilibrium.

On top of the additional analysis that points to rent seeking alternative outweighing the *value adding* role of business groups, anecdotal evidences collaborate this finding. Group affiliated firms have acquired government owned resources without open tender and low price[14], privileged access to loan from government owned banks[15], postponed or refused payments of loans taken from government banks[16], disguised their identity as foreign investors and access developed investment areas, and tax haven dedicated to promote foreign direct investment (Bassiouni, 2012). There are also some anecdotal evidences as to how affiliates of family business groups experienced lower performance right after the government change. Following the political change some of the business tycoons fled out of these countries, their properties were frozen[17] and some others left behind bars for corruption cases[18]. The owners of these groups are absent from guiding and overseeing their business, and some of their resources is not any more free to be utilized by their firms. Moreover, some of those who are under court trial have reimbursed some of the money they are alleged to profiteer[19] as declared by the supreme court of Armed Forces (Roll, 2013). On top of this, when the main shareholder of a firm is black listed, other companies might shy away from making business deals with these companies that in turn hurts their performance. With this short period of time these immediate actions are significant enough to bring about a marked negative effect on the performance of firms affiliated to business group.

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[14] One of the top court cases on Yassin Mansour, main shareholder and CEO of Palm Hills Developments group (PHD) is under trial for profiteering and unlawfully acquiring public property

[15] Ahmed Ezz, the CEO and main shareholder of Ezz Steel group is being retried on charges of laundering LE6.4 billion in illegally acquired funds between 2003 and 2011 in deals related to his acquisition the largest state owned company in Egypt http://english.ahram.org.eg/NewsContent/3/12/82024/Business/Economy/Court-orders-bail-for-steel-tycoon-Ahmed-Ezz.aspx

[16] Yassin Mansour, head of the Mansour Group is accused of taking a pieces of land owned by the State, and refusing to pay loans from Egyptian banks worth more than EGP 2 billion which he had obtained between 2006 and 2008.

[17] Around $47 million of his possessions of Hussen Salem were frozen and houses worth $14 million were seized (Bassiouni 2012).

[18] E.g. Ahmed Ezz (Ezz steel and ceramics), Ahmed Mansour(Palm Hills real estate development) were under trial

[19] for example through corruption, can thus be legalized post facto by means of financial compensation, while embezzled funds may simply be repaid. The first major business figure to use of this opportunity was Yassin Mansour , the owner of Mansour Group who was able to have several cases dropped by paying the equivalent of more than $40 million(Stephan Roll, 2013)

By establishing a strong tie with politicians as family business group owners did in Egypt and Tunisia, affiliated firms manage to access resource and regulatory benefits from the government. However, these strong and personalized ties are so visible that changes in the political system makes these firms liable to measures taken by the subsequent government. This is in line the experience of large business groups in Indonesia after Suharto left his leadership position (Dieleman, and Boddewyn, 2012).

Although affiliates of business groups in general and family business groups in particular are getting advantage by getting connected to political leaders, the benefit is not sustainable. First, all the resources and advantages are ripped off when the political leaders are changed, *albeit* in a revolution like the *Arab Spring*. Second, these benefits are not accrued for free. The owners spend a great deal of time and resource that would have been used to develop the competence of the firm than establishing political bonds. Coming back to the initial question of whether business groups are '*paragons or parasites*' the evidence in the North Africa seems to suggest the dark side of their role, parasites. However, one can argue that North Africa has a certain kind of political and institutional context that makes investment in rent seeking activities more valuable than *value adding* investments for groups. Future research might identify the institutional contingencies or boundary conditions under which business groups prefer to invest more in establishing political connections than investments that fill the missing market in *value adding* ways. One might speculate that when governments are long serving, have a strong presence in the economy both as a regulator and main economic actor and have a centralized political system like the case of North Africa, investment to establish political connections might have a higher return than *value adding* investments. On the other hand, if governments generally have no strong role in the market as a regulator or that the political system is highly decentralized, the return from political connection might be lower for business groups and ultimately they might prefer to allocate their resources in *value adding* investments.

The consequence of the predominance of rent seeking firms' in an economy might be even more severe for the non-connected firms since these firms are excluded from accessing government resources which are crucial for their growth simply because they did not show political loyalty and willingness to affiliate strongly with politicians. Moreover, it has a

number of ramifications on the type of firms and entrepreneurs that will be created and succeeded. Such business environment might reward only a particular kind of entrepreneurs while discouraging innovative and entrepreneurs.

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Table 1.The mean of the percentage of ethics and strength of corporate governance of firms in the three countries for three years*.

	Morocco	Egypt	Tunisia
Ethical behavior of firms	0 .48	0.53	0.76
Strength of auditing and reporting standards	0.30	0.50	0.59
Efficacy of corporate boards	0.43	0.34	0.61
Protection of minority shareholders' interests	0.56	0.57	0.85
Mean	0.44	0.48	0.70
p- value	Morocco vs Egypt = 0.237	Egypt vs. Tunisia=-0.002	Morocco vs Tunisia =-0.004

Source: Rank data is taken from the annual Global Competiveness raw data of the World Economic Forum.

*The numbers in the table are calculated from the rank data. The rankings of the countries for the five firm ethics and governance indicators provided by the World Economic Forum are converted into percentages and the averages for three years (2008-2011) are estimated. Higher numbers indicate better firm governance or ethics. I included the 2011 because I assumed that the report takes at least one year to get ready after the data collection

Table 2. Classification of business groups by ownership

Types Of Business Groups By Ownership	Observations	Mean	Standard Deviation	Min	Max
Business groups	3084	.67	.47	0	1
Family business group	3084	.34	.47	0	1
Government business groups	3084	.20	.40	0	1
Widely held financial business group	3084	.05	.23	0	1
Other widely held company financial group	3084	.06	.23	0	1
Other kind of business group	3084	.02	.13	0	1

Table 3. Bivariate correlations

	Mean	Std.div.	1	2	3	4	5	6	7	8
Return on assets(1)	.081	.081	1.00							
Business groups (2)	.674	.674	0.01	1.00						
Family business groups(3)	.341	.341	0.12	0.50	1.00					
Family(4)	.530	.530	0.11	-0.07	0.68	1.00				
Diversification (5)	3.818	3.818	-0.08	0.48	0.10	-0.17	1.00			
Log of Firm age(6)	3.314	3.314	-0.03	-0.05	-0.15	-0.12	0.16	1.00		
Log of assets (7)	4.962	4.963	0.10	0.31	0.19	-0.12	0.06	-0.10	1.00	
Foreign owned companies(8)	0.161	0.367	0.19	0.074	0.06	-0.03	-0.09	-0.11	0.27	1.00

Table 4. Comparison of firm characteristics between group affiliates and non-affiliates in treated countries

	Stand-alone firms	Firms affiliated To Business groups	Difference
Log of Firm age	3.307 (0.018)	3.222 (0.0178)	0.084*** (0.028)
Observations	897	1708	2605
Observations	788	1486	2274
Log of assets	4.126 (0.064)	5.223 (0.045)	-1.097*** (0.077)
Observations	777	1425	2202
Diversification	1.920 (0.041)	2.040 (0.030)	-0.120** (0.051)
Observations	883	1677	2560
ROA	0.078 (0.003)	0.082 (0.002)	-0.004 (0.004)
Observations	897	1712	2609

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, standard errors in parenthesis

Table 5. Comparison of firm characteristics between group affiliates and non-affiliates in the control and treated countries

	Affiliates of business groups Morocco (control country)	Affiliates of business groups Egypt and Tunisia (treated Countries)	Difference
Log of Firm age	3.61 (0.034)	3.22 (0.018)	.391*** (0.042)
Observations	367	1708	2075
Observations	356	1486	1842
Log of assets	5.980 (0.092)	5.223 (0.045)	0.756*** (.098)
Observations	327	1425	1752
Diversification	2.00 (0.062)	2.04 (0.030)	-0.38 (0.138)
Observations	367	1677	2044
ROA	0.078 (0.003)	0.082 (0.002)	-0.003 (0.005)
Observations	367	1712	2079

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, standard errors in parenthesis

Table 6 Mean difference in ROA between affiliates of treated business groups with respect to controls

Performance Measures	Firms affiliated to treated Business Groups	Stand-alone Firms	Difference	Firms affiliated to treated Business Groups	Affiliates of the control Business Groups	Difference
	1.b	1.a	1.c	2.b	2.a	2.c.
ROA	0.082 (0.002)	0.078 (0.003)	0.004 (0.004)	0.082 (0.002)	0.078 (0.003)	0.003 (0.006)
Observations	1712	897	2609	1712	367	2079
ROA before the treatment	0.090 (0.003)	0.085 (0.004)	0.005 (0.005)	0.089 (0.003)	0.083 (0.004)	0.006 (0.007)
Observations	1244	597	1841	1244	246	1490
ROA after the treatment	0.061 (0.004)	0.065 (0.006)	-0.004 (0.007)	0.061 (0.004)	0.069 (0.005)	-0.008 (0.008)
Observations	468	300	768	468	121	589
DID (difference in Difference)			**-0.0111*** (003) (N=2609)**			**-0.016*** (0.003) (N=2079)**

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, standard errors in parenthesis

Table 7. ROA on group affiliation and treatment in the treated countries

	1.a (FGLS)	1.b (FGLS)	2(Firm Fixed effect)
Affiliation to Business Group(BG) *(H1)*	0.016*** (0.005)	0.005 (0.004)	
Affiliation to BG after the treatment *(H2)*	-0.002 (0.003)	-0.000 (0.004)	0.015 (0.017)
Affiliation to Family business group (FBG)		0.014*** (0.005)	
Affiliation to FBG after the treatment *(H3)*		-0.009** (0.004)	-0.024*** (0.008)
Being a family firm after the treatment		-0.004 (0.004)	0.002 (0.008)
Being a family firm		-0.004 (0.004)	
Treatment effect	-0.020 (0.015)	-0.073** (0.035)	-0.058* (0.035)
Level of diversification	-0.007*** (0.001)	-0.006*** (0.001)	
Log of firm age	0.007*** (0.002)	0.009*** (0.002)	-0.087*** (0.021)
Log of assets	0.007*** (0.001)	0.008*** (0.001)	0.039*** (0.006)
Foreign owned company	0.052*** (0.005)	0.041*** (0.003)	
Industry, quarter and country dummies	Yes	Yes	
Constant	-0.018 (0.068	0.094* (0.054)	0.200*** (0.072)
Number of observations[1]	2,095	2095	2104
Number of groups(firmid)[1]	182	182	191
	Wald chi2(79) = 4858.09	Wald chi2(83) = 4716.14	R2=0.12
	Prob> chi2 0.0000	Prob> chi2 0.0000	Prob> F 0.0000

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, panel heteroskedastic, standard errors in parenthesis

[1]The difference between the number of groups observed in the fixed effect model and the gls model exactly shows how many single observation groups are dropped from the first order autoregressive gls estimation.

Table 8. ROA on group affiliation in the control and treated countries

	1.a(FGLS)	1.b(FGLS)	2(Firm Fixed Effect)
Affiliation to Business groups(BG) in the treated countries *(H1)*	0.013***	0.002	
	(0.004)	(0.004)	
Affiliation to BG in the treated countries after the treatment *(H2)*	-0.014***	-0.016***	-0.004
	(0.002)	(0.005)	(0.009)
Affiliation to Family Business group(FBG) in the treated countries		0.018*	
		(0.010)	
Affiliation to FBG in the treated countries after the treatment *(H3)*		-0.007*	-0.027***
		(0.004)	(0.008)
Being a family firm in the treated countries		-0.000	-0.005
		(0.005)	(0.009)
Being a family in the treated countries after the treatment		0.003	
		(0.009)	
Treatment effect	-0.003***	-0.052	-0.017
	(0.001)	(0.034)	(0.034)
Level of diversification	0.011***	-0.002***	
	(0.002)	(0.000)	
Log of firm age	0.008***	0.008***	-0.082***
	(0.001)	(0.002)	(0.020)
Log of assets	0.065***	0.004***	0.043***
	(0.005)	(0.001)	(0.006)
Foreign owned company	-0.029**	0.051***	
	(0.014)	(0.004)	
Industry, quarter and country dummies	Yes	yes	
Constant	-0.055	-0.003	0.157**
	(0.070)	(0.080)	(0.073)
Number of observations[1]	1,677	1,677	1683
Number of firmid (groups)[1]	164	164	170
	Waldchi2(73)= 1959.50	Wald chi2(77) = 2641.47	R2=0.14
	Prob> chi2 0.0000	Prob> chi2 0.0000	Prob> F = 0.0000

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, panel hetroskedastic standard errors in parenthesis

[1]The difference between the number of groups observed in the fixed effect model and the gls model exactly shows how many single observation groups are dropped from the first order autoregressive gls estimation.

Table 9.ROA on group affiliation and treatment with two control groups

	1a.FGLS	1b.FGLS	2.Firm-fe
Affiliation to Business Group(BG) *(H1)*	-0.002 (0.007)	-0.001 (0.011)	
Affiliation to BG in the treated countries *(H2)*	0.003 (0.008)	-0.007 (0.011)	
Affiliation to BG after the treatment	-0.001 (0.006)	-0.009 (0.009)	-0.013 (0.020)
Affiliation to BG in the treated countries after the treatment	-0.001 (0.006)	0.009 (0.010)	0.028 (0.021)
Affiliation to Family business Group(FBG)		0.027** (0.011)	
Affiliation to FBG in the treated countries		0.003 (0.011)	
Affiliation to FBG after the treatment		0.009 (0.007)	0.009 (0.016)
Affiliation to FBG after the treatment in the treated countries		-0.017** (0.008)	-0.033** (0.018)
Family firms in the treated country after the treatment		-0.006 (0.018)	0.018 (0.038)
Family firms after the treatment		0.004 (0.018)	-0.015 (0.038)
Family firms in the treated countries		-0.016 (0.010)	
Being a family firm		0.001 (0.010)	
Being in the treated countries	0.012* (0.007)	0.012 (0.011)	
Treatment effect	-0.015 (0.014)	-0.056* (0.033)	-0.029 (0.036)
Being in the treated countries after the treatment	-0.010* (0.006)	-0.013* (0.008)	-0.024 (0.016)
Level of diversification	-0.004*** (0.001)	-0.003*** (0.000)	
Log of firm age	0.003 (0.002)	0.005*** (0.002)	-0.087*** (0.019)
Log of assets	0.006*** (0.001)	0.005*** (0.001)	0.037*** (0.006)
Foreign owned company	0.044 *** (0.003)	0.041*** (0.003)	
Industry, Quarter and Country dummies	yes	yes	yes
Constant	0.092* (0.053)	0.103* (0.055)	0.209*** (0.067)
Number of observations[1]	2,511	2,511	2,521
Number of firmid(groups)[1]	247	247	257
	Waldchi2(85) =2625.36	Wald chi2(93) = 16535.95	R2=0.11
	Prob> chi2 = 0.000	Prob> chi2 =0.000	Prob> F =0.000

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, panel hetroskedastic standard errors in parenthesis
[1]The difference between the number of groups observed in the fixed effect model and the gls model exactly shows how many single observation groups are dropped from the first order autoregressive gls estimation.

ANNEX
Table A.
ROA on family business groups after the treatment
in regulated industries

	FGLS
Affiliation to Business Group(BG)	0.003
	(0.007)
Affiliation to BG after the treatment	-0.006
	(0.005)
Affiliation to BG in regulated industries after the treatment	0.012*
	(0.006)
Affiliation to Family business Group (FBG)	0.027***
	(0.009)
Affiliation to FBG after the treatment	-0.001
	(0.004)
Affiliation to FBG after the treatment in the regulated industries	-0.011*
	(0.007)
Family firms in regulated industries after the treatment	-0.008**
	(0.004)
Family firms after the treatment	0.003
	(0.003)
Being a family firm	-0.014**
	(0.007)
Regulated industries after the treatment	-0.010**
	(0.005)
Regulated industries	-0.001
	(0.014)
Treatment effect	-0.019
	(0.015)
Level of diversification	-0.005***
	(0.001)
Log of firm age	0.009***
	(0.003)
Log of assets	0.006***
	(0.001)
Foreign ownership	0.051***
	(0.005)
Industry, time, and country dummies	yes
Constant	-0.020
	(0.071)
Number of observations	2095
Number of firmid(groups)	182
Wald chi2(88)	3545.08

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, panel hetroskedastic standard errors in parenthesis

Table B. ROA on placebo treatment

	(FGLS)
Affiliates of Business Group(BG)	-0.000
	(0.007)
Affiliates of BG after the placebo treatment	0.001
	(0.003)
Affiliates of Family business group (FBG)	0.027***
	(0.009)
Affiliates of FBG after the placebo treatment	0.004
	(0.004)
Family firms after the treatment	-0.002
	(0.004)
Being a family firm	-0.015**
	(0.006)
Placebo treatment effect	0.018
	(0.015)
Level of diversification	-0.005***
	(0.001)
Log of firm age	0.008***
	(0.003)
Log of assets	0.006***
	(0.001)
Foreign ownership	0.047***
	(0.005)
Industry, quarter, country dummies	yes
Constant	-0.033
	(0.070)
Number of observations	2,095
Number of groups(firmid)	182
Wald chi2(83)	2397.28
Prob> chi2	0.0000

*Significant at <=10%, ** significant at <=5%, *** significant at<=1%, panel hetroskedastic standard errors in parenthesis

Table C

Difference in firms' engagement in the tourism sector

	Firms affiliated to FBG	Firms not affiliated to FBG	Difference
Firms in the tourism sector in the treated countries	0.091 (0.010)	0.085 (0.007)	0.005 (0.012)
Number of firms	762	1790	2552

Table D

The effect of the government change on the ROA of firms affiliated to government vs.

family business groups

	Firms affiliated to Government business groups	Firms affiliated to family business groups	Difference
Mean ROA	0.066 (0.005)	0.101 (0.003)	-0.036*** (0.006)
Observations	595	797	1392
Mean ROA before the treatment	.067 (0.007)	0.112 (0.004)	-0.046*** (0.007)
Observations	437	583	1020
Mean ROA after the treatment	0.063 (0.008)	0.072 (0.005)	-0.009 (0.009)
Observation	158	214	372
Effect of the treatment	-0.004 (0.012)	-0.041*** (0.007)	-0.041*** (0.008)

CHAPTER 3

ADAPTATION TO POLITICAL UNCERTAINTY: THE ROLE OF STRUCTURAL AND RELATIONAL POLITICAL CONNECTIONS

INTRODUCTION

Board members play two fundamental roles for organizations: Management control role and resource provision role (Hilman and Dalziel, 2003; Pfeffer, 1972, Pearce II and Zara, 1992). Board members control the management so that the interest of managers does not override the interest of shareholders. Equally important, board members also have a fundamental role in bring resources to the organizations. These resources can be expertise and advise, legitimacy, linkage to important stakeholders, and provision of important information and preferential treatment (Hilman and Dalziel, 2003; Pfeffer, 1972). The value of resources boards bring to organizations will change as the environment changes because the nature, type, and extent of resource dependence alter with changes in the environment. Organizations adjust their top management specifically their board members to maintain their linkage and resource dependence with their environment (Hilman and Dalziel, 2003; Pfeffer, 1972). Studies on board of directors and environmental uncertainty have shown that board composition reflects the extent of resource dependence on the environment. For example, Pfeffer, (1972), has shown that firms with high debt to capital ratio have high representation of external board members. Similarly, Pearce and Zara, (1992), have shown that environmental uncertainty, poor past performance, external growth, and diversification are positively related to board size, and representation of outside boards. They also found that board size and increased outside board representation are positively associated with future performance. Many of the studies in management regarding the board of directors show how board composition is related with the resource dependence of the firm to its environment.

With particular emphasis to political environment, the literature in finance has examined that inviting politicians to the board serves as means to establish political connections. Political connections help firms to access loans, be bailed out by governments during financial crisis, and benefit from government contracts (Amore, 2013; Birhanu, 2014; Faccio, Lang, and Young, 2001; Faccio Masulis, and, McConnell, 2006, Fisman 2001).

How does inviting politicians to the board provide these privileges to firms? The underlying assumption is that politicians have resources such as important information about the government that might affect the present or future performance of the firm, and expertise, and legitimacy to deal with different government entities. Politicians possess the power to dispense these benefits because of the position they hold in the state apparatus. If that is the case, does direct connection to the state apparatus (being a state controlled firm) predict similar effect on firm performance) especially during political uncertainty? This is especially important because connections with politicians are not sustainable during political regime changes. When there is frequent regime change, firms face political uncertainty due to lack of information regarding expected change in the policy arena, and problem of identifying the influential actors in the policy process.

This study proposes two mechanisms by which firms can better deal with political uncertainties of frequent regime change. By broadening the concept of political connection to encompass structural political connections (connections that arise from state control of firms), and relational connections (connections established through inviting politicians into boards), this study investigates if these connections differ in their role to reduce political uncertainty. The results suggest that during frequent regime change, firms that are structurally connected with the state perform better than those with no structural connection. Second, firms with no structural connection reduce uncertainty and improve performance by renovating their relational connection. Unlike the structural connection, benefits of renovating relational connections (changing their board of directors) are limited to firms operating in regulated industries. Using an exogenous shock that triggers the change in board of directors, this study also reduces the problem of endogeneity in estimating the effect of change in board of directors on performance.

This paper contributes to the literature of non-market strategy by indicating how firms can sustain political connections and associated benefits by renovating their board of directors. Secondly, it also proposes that during political uncertainty, investors might benefit from investing in state controlled firms because the presence of the state shields firms from political uncertainty. This is particularly important in the context of emerging economies in

which benefits of political connection is considerable but the risk of regime change is high (Birhanu, 2014).

The rest of the paper is organized as follows. Part two discusses the theoretical and conceptual background of uncertainty and the role of board of directors. In part three and four, I develop hypotheses and describe the research context and methods. Then the next part discusses the empirical results and the final section provides concluding remarks.

BACKGROUND

Environmental uncertainty and political regime change

Environmental uncertainty is one of the dimensions of an organizational environment (Child 1972, Dess and Beard 1984). It is associated with the problem to predict the direction of change in the environment and its potential effect on a firm as well as to identify the right course of action and its expected outcomes (Boyd, 1990; Dunkan 1972; Milliken, 1987). Firms face uncertainty when the decision context is complex, or it is under flux (Tung, 1979). When a decision context requires considering a large set of factors and components which are diverse, it becomes difficult to understand the interconnection between these factors. This in turn challenges the ability to comprehend the decision scenario (Lawrence and Lorsch, 1967; Duncan, 1972). Similarly, if the decision context is turbulence, it is difficult for a firm to update itself with this continuous change and understand the impact of the change on the firm's activities. Complexity, heterogeneity, and dynamism in the environment create ambiguities at different stage of the decision process that potentially leads to flawed decisions.

 Firms differ in their ability to process complex set of information and configure various components and factors that affect their decisions. The same level of environmental complexity might impose different level of uncertainty depending on their ability to access relevant information, process a large set of information, and understand the decision context (Haunschild, and Miner, 1997).

With a particular emphasis to political environment, Henisz and Delios, (2004), identified two sources of political uncertainty: Uncertainty related to the extent of discretion given to policy makers, and uncertainty due to regime change. If the polity is structured to give unchecked and less constrained discretion for the policy makers, they might use it in their own interest. As a result, firms will be subject to political hazards that arise from policies, rules and regulations that lack credible commitment. However, firms which are successful enough to get connected with such policy makers can be beneficiaries of the system (Herzog, Munir, and Kattuman 2013; Dieleman, and Boddewyn, 2013). Therefore, political hazards of this sort can be exploited as valuable opportunities for certain firms. The second source of political uncertainty comes from regime change. Changes in the central leadership might range from mild change that simply replaces the head of state without changing the leading political party to revolutionary change in which a leading political group is completely replaced by a fundamentally different group (Hagen, 1989). In this extreme case, the central leadership is taken by a group that was excluded from the political system. This kind of regime change occurs with organized popular movement, or with military interventions (Hagen, 1989; Henisz and Delios, 2004). When regime changes are radical, the political and policy processes as well as policy actors become completely different. Therefore, knowledge of previous policy process and key actors are doomed useless or at time harmful. So firms in countries that experience regime change face uncertainty to predict the consequence of having a completely different political leadership in terms of policies, rules, and regulatory changes that affect the operation of firms. This uncertainty is further exacerbated by the lack of access to credible information regarding the change anticipated or initiated in the policy arena and identifying influential actors in the policy process. These uncertainties are heightened when regime changes are frequent.

Frequent regime changes bring uncertainties of complexity and dynamism (Tung, 1979; Child 1972; Dess and Beard, 1984). The political change is complex because the polity structure, the actors in the policy arena, and probably the policy priority and direction are fundamentally changed. Therefore, it is hard to predict how the various actors interact to determine the process and outcomes of policies, laws and regulations. Secondly, with the frequent regime

change, the polity structure is changing frequently. As a result, the knowledge of the political environment needs to be updated substantively and swiftly. Accessing information that is pertinent to anticipated changes in the polity, and the possible policies the new polity will draft helps to know the possible interventions a firm can make to protect its interests or probably gain from new the policies. Henisz and Delios, (2004), argued that firms might be willing to invest to gather information at their own cost that might be required for policy formulation that benefit both the policy makers, competitors and or other stakeholders. This is because, doing so will also allow them to predict the future condition of their business environment and plan their activity accordingly. Therefore, when uncertainties stem from political environment, information regarding the future direction of the state would party affect firms performance. Consequently, firms would strive to get these information that would allow them to predict the future business condition.

Political regime change uncertainty and the role of board of directors

The literature on the role of board of directors suggests that board composition reflects the interdependence of the firms with their environment. Pfeffer, (1972), has shown a positive correlation between the proportion of loan to capital ratio with board size representing the financial sector. He also found that the proportion of attorneys in the board is positively correlated with whether the firm is nationally regulated. Boyd, (1990), has shown that the composition of the board is correlated with different dimensions of environmental uncertainty. He found that the size of board is positively related with environmental dynamism.Very specific to the organizations response to changes in a specific environment, Hilman, Cannella and Paetzold, (2000), have demonstrated that the composition of the board changes as organizational interdependence changes. They provide evidence that following the deregulation of the US airlines industry, the composition of the boards of US airline firms has changed from a high representation of regulators and insiders on the board to an increased presence of business experts and community representatives in the board. They argue that this change in board composition shows the shift in the interdependence of firms in US airlines from the regulator to the competitors and customers. This study, however, does not show whether this change in the board composition has led to improved performance of the firm.

Moreover, environmental uncertainty studies mainly focus on technological uncertainties and changes in customers preferences. However, we still lack enough evidence whether firms also change the board of directors when these changes are not specific to a particular sector, like political uncertainty due to frequent regime change.

This is particularly important because studies have shown that political connection is a valuable resource for firms. One way through which firms establish political connection is by inviting politicians to the board. Given that these political connections are specific to the firm and the politician, how do firms handle changes that disrupt benefits of this connections? Is there any alternative to maintain political connection that is sustainable? In this paper, drawing insights from the role of board of directors in managing uncertainties in the external environment as a means of adaptation and uncertainty reduction, it seeks to understand the heterogeneity among firms in their exposure to political uncertainty, the strategies they deploy in managing this uncertainty and its implication on performance.

HYPOTHESES

Political connection has been argued to be a very important resource for firms both in emerging and advanced economies. The literature on the value of political connection of firms has typically operationalized connections on relational level, directly or indirectly. A firm is considered to have a direct political connection if one of its top officers or large shareholder has a political position as a head of state or member of the national parliament. An indirect political connection, on the other hand, is operationalized based on whether the relatives of the head of state or parliament member is a major shareholder or has executive position in the firm. In addition, the presence of friendship between the top executives and the head of the state is also considered as political connection (e.g. Faccio, 2004, Faccio et al, 2006, Fisman 2001). This and similar concept is used to measure the existence of political connection both for state and private controlled firms.

This measure of political connection assumes that returns from political connections are derived from a firm's relation with the individual who possess the power to dispense benefits. The power to dispense benefits by the politicians arises from the position they hold on the state apparatus. If that is the case, does direct connection to this state apparatus, not by politicians, differ on the benefits it renders? That is would state ownership predict similar

effect on firm performance? The effect of state ownership on firm performance is a complex relationship.

First, state controlled firms have different objectives other than maximizing firm's profitability. These objectives could be justified by social objectives and political motivations (Menozzi, Urtiaga, and Vannoni, 2012; Shleifer, 1998). Since the ultimate owners of state controlled firms are citizens, these firms might prioritize social objectives that are priorities of citizens (Menozzi *et al.,* 2012). State controlled firms might, for example, make investments in less developed regions in order to attract others to invest in this area, and to provide job opportunities. Secondly, since citizens are represented by the politicians through the election process, state controlled firms are overseen by political bodies or agencies. Therefore, motivated by the self-interest to stay in power, instead of overseeing firms on the behalf of the citizens, politicians may channel the resources of state controlled firms for short term political benefits such as maintaining and expanding political supports or other forms of wealth transfer (Shleifer 1998). Under a less controlled system, managers of state controlled firms might also conspire with the politicians and capitalize their personal benefits in exchange for incorporating the benefit of politician's short term interest.

 The existence of these intertwined motivations of state ownership could make predicting the effect of state control on the performance of firms.

Irrespective of how state ownership affects performance, would this ownership matter in dealing with environmental uncertainties that stem from frequent regime change? This paper takes a different stance in its attempt to understand the strategies of firms in dealing with political uncertainty. Departing from the previous literature on the measure political connection, I categorize sources of political connection, including state ownership as an alternative way of getting political connection. This conceptualizing is particularly important in understanding the coping strategies for political uncertainties that arise from frequent regime changes. By definition, political connections that stem from personalized connections are threated when there is regime change. Structural political connections on the other hand are stable regardless of changes in political regimes.

Structural connection is a political connection that remains valid irrespective of changes in the political figures. If state controlled firms are supervised by politicians, when regime change

happens, there would likely be changes in the management and board of directors. The change in the management and boards might have two opposite effects. The first is that, since the politicians or affiliates are removed by the new regime affiliates, information about the political process of the economy that might affect the future performance of the firms is easily accessible. Therefore, during changes in regimes, uncertainties associated with the policy processes and directions of the new government are accessible (Pfeffer and Salancik, 1978).

 Moreover, compared with non-state controlled firms, state controlled firms will remain legitimate entities with which the new regime would be willing to do business with, provide contracts, auctions and so on. This however, could be difficult for private firms who would be assumed to be partners or affiliates of the previous regime.

H1: During political uncertainty, state-controlled firms perform better than non-state controlled firms

Unlike structural political connections, relational political connections withers away when there is sudden and frequent political change. One alternative for these firms is to renovate their political connection or reduce uncertainties in the political environment is by changing their board of directors. New boards of board of directors provide network, connection and information resources.

There are a number of mechanism by which new boards help firms to manage political uncertainty (Pfeffer and Salanik, 1978). First, changing a new board that is affiliated to the new political regime signals the recognition from the side of the firm that the new regime and politicians alike are relevant stakeholders that the firm would like to do business with. It is also a mechanism by which firms get the opportunity to coopt the politicians to help them get business opportunities with the government. Second, boards serve as conduits for information about the future policy directions of the state so that they can plan their operation accordingly. Accessing information that is pertinent to anticipated changes in the polity, and the possible policies the new polity will   draft helps to know the possible interventions a firm can make to protect its interests or probably gain from new the policies. Boards they also provide preferential access to resources that would otherwise be difficult to get.

The effect of personalized connections however might have limited scope. In comparison with structural connections, relational connections are less visible and personalized, as a result the benefit it might render could be limited. Moreover, board change might also have a cost like any other change in an organization. When new member joins a board, the previous and the new comers need to learn to work together. As a member of a team providing expertise, advises and directions to the firm, they need time to operate as a team. The old board members need to learn how to leverage on the potential legitimacy , information, and influence the new board member can provide them. Given that the change is mainly driven by uncertainties in the political environment, the cost of changing the board might overweigh the benefit it brings unless it is targeted to a particular sector in which the benefit offsets the cost. Given the that benefits of renewing the board is expected to reestablish political connection, firms which make changes in the board of directors benefits more renovating their board if they are in regulated industries than in others in which the connection provides little benefits.

H2: During political uncertainty, board change by non-state controlled firms in regulated industries is positively related to firm performance

METHODOLOGY
Research Context

The context in which I tested my hypotheses is Egypt. Between February 2011 to May 2014, a total of 4 head of states have been in power: Two transition government and two democratically elected governments. After the Mubark's government, the leadership was transferred to the Supreme Council of the Armed Forces until a democratically elected party come into power. The supreme council headed by Mohamed Hussein Tantawi served as a transition government from February 2011- June 2012. In June 2012, winning a democratic election, Mohamad Morsi became the head of the state. After one year presidency, Morsi was again deposed on July 3 2013 and replaced by a new interim administration headed of the Supreme Constitutional Court, Adly Mansour. Presidential election was held in May 2014 and the former Egyptian Defense Minister Abdel Fattah el-Sisi took the presidential position.

In each of the two the democratic elections, referendum is held and constitutions are amended. The amendments swung from a constitution that enshrines Islamic values to a constitution that strengthening the independence of the police and power of the Military from supervision by a civilian government. Two political parties, the National Democratic Party, the party of Mubarak, and Muslim Brotherhood, the party of Mohamad Morsi, had been dissolved during this period. In less than four years, the changes in leadership of the state are not restricted to changing individuals but also the cabinet members as well as the constitution of the country. Political uncertainty in the context I am investigating thus refers to change of three governments each serving not more than one year. Compared to its history, the country has experienced a drastic shock in the political system at the bringing of 2011 and sustained until now. In fact the country is preparing to make a parliamentary election in March 2015.

Data Sources

The data covers all listed firms (172) in Egyptian stock exchange from 2005- 2013. It is unbalanced panel data. Quarterly performance data is collected from Thompson one. The board of directors data is collected from Thomson one and Capital IQ People intelligence. Both provide information about the name of officers, the board, the type of the board (executive or non-executive) and the date of entry and exit of the board of directors. I used both sources to reduce the number of missing information. There is a lot of missing observation regarding the date of entry of boards for many firms. Since my variable on board change depends on the available information on the date entry of boards, if the disclosure for the date of entry of boards is not random, my results might be biased. Data about regarding regulated industries is taken from the Investing Across Sectors indicators data of the World Bank Group

Description of Variables

Dependent variable

Return on Assets: The world scope (provider of data from Thomson one) defines return on asset as (Net Income before Preferred Dividends + ((Interest Expense on Debt-Interest

Capitalized) * (1- Tax Rate))) / Average of Last Year's and Current Year's Total Assets * 100.

Independent Variables

State controlled firms: A firm is identified as state controlled if at least 20% of the firm is owned by the state otherwise it is not state controlled firm.

Family controlled firms: A firm is identified as family controlled if at least 20% of the firm is owned by an entrepreneur or a family.

Change in the board of directors: It is a dummy variable that takes a value of 1 if the firm has changed at least one board of director in each quarter otherwise zero. Even though I have a count data for the number of boards changed in each firm, I preferred to use the dummy variables. Because the number of board changes might depend on the total number of board of directors for which I do not have the data. Change in board of directors is further qualified as executive or non-executive board change depending on whether the board member has an executive position in the firm or not. The non-executive board includes those of independent boards.

Regulated industries: This is also a dummy variable that takes the value of one if the there is a restriction on foreign equity ownership in an industry. This data is taken from the Investing Across Sectors indicators data of the World Bank Group. Investing across boards comprises of 4 indicators that measures the extent to which the economy is attractive to foreign investors. Specifically it measures the ownership restriction to Greenfield entry or merger and acquisition (investing across sectors indicator), Starting a Foreign Business indicator, Accessing Industrial Land indicators, and Arbitrating Commercial Disputes indicators. Except the investing across sectors indicator the rest three do not show variation across sectors. Therefore, I used the investing across sectors indicator as a proxy to measure if an industry in regulated. It measures of the legal restrictions on foreign ownership based on investment codes, commercial codes, and merger and acquisition laws of nations.

Control variables: I have included controls at the firms, industry and quarters (time). Firm level controls include firm age (log transformed), firm size measure by assets (log

transformed), concentration of ownership, and foreign ownership (control). The ownership concentration and foreign ownership (control) are both dummy variables. Similar to the state control and family control definition, the cutoff point for a firm to have a concentrated ownership or foreign control is 20%. While already a large portion of concentrated ownership is controlled by the family, the state or foreign investors, there are small portion of others such as investment managers, cooperatives, and labor union that control some remaining firms with concentrated ownership.

Empirical strategy

The estimation strategy is difference in difference whereby the first government change is considered as the treatment, the beginning of political uncertainty. I used OLS estimation with robust standard error clustered by panel id.

Endogeniety concerns in the estimating corporate governance and firm performance

Understanding the causal relationship between board composition or board dynamics and firm performance is trapped with potential simultaneity or omitted variable biases (Wintoki, Linck and Netter, 2012). This could be party the reason that studies that investigate the relation between board composition and firm performance are inconclusive. For example Mehran (1995) show that board independence has no effect on performance. Yermack, (1996), found a negative effect of board independence on firm performance in OLS estimation while he found a positive effect in a fixed effect model. Coles, Daniel, and Naveen, (2008), found positive effect of board size on performance for large and diversified firms. Some studies tackle this problem using employed a dynamic model that also incorporates the relationship between past performance and current board structure to estimate the structure performance relationship (e.g. Wintoki *et al*, 2012). Others proposed other alternatives such as the use of instrumental variable approach and lagged board structure to reduce the concern of endogeneity (Renders and Gaeremynck, 2006).

In this paper this concern is mitigated in two ways. First, unlike the previous studies, the focus of this paper is studying the effect of change in the board of directors triggered by an exogenous shock on performance. What the model estimates is, after controlling for an endogenous choice of changing the board of directors under normal condition, what is the

effect of changing boards triggered by an exogenous shock on firm performance. Second, to avoid the simultaneity problem of change in board on performance, I used a lagged (1 quarter) board change instead of the concurrent board change.

RESULT AND DISCUSSION

As table 1 shows, state and family controlled firms account more than 70% of the total observation. On average, 10 % of the observations change their board of directors. The proportion of observation in which the non-executive board changes is higher than executive board changes. 45% of the observations are in regulated industries. In Egypt, foreign ownership restriction is imposed in transport, media, banking, construction tourism and real stat sectors. But there is no sector in which foreign ownership is completely prohibited.

Insert table 1 about here

Do firms really respond to this political change and uncertainty by changing their corporate governance?

The data on board change from the first quarter of 2005- to the 2nd quarter of 2013 shows dramatic increase the propensity to change boards during the period of frequent regime change. In table 2, I present the linear probability model estimation of factors that determine the change in board of directors. The first column is for change in both executive and non-executive boards while the second and the third column are estimations for each type of boards, executive and non-executive board respectively. Keeping other variables constant, the likelihood of changing boards has increased from 8% to 21% during the period of frequent regime change. For change in executive boards, the probability has increased from 5% to 9% while for the non-executive boards it has increased from 5%-16% in the marginal effect estimation. Board change is mainly explained by the frequent government change while firm size, state or family ownership also explains is associated with changing the board of directors.

Insert table 2 about here

In table 3 and 4, I present the main results that test the effect of relational and structural connections of firms on return on asset (ROA) during political uncertainty. In table 3, column I, I test the effect of being a state controlled firm, Hypothesis 1, during political uncertainty. From column II –IV, I present the effect of changing board member on performance. Specifically, in column II, board change refers to changes either in executive or non-executive boards. Column III and IV present a separate regression for executive board change and non-executive board change respectively. Since there are many interaction factors (4 way interaction), in table 3, I present the results for structural and relational measures of political connection in separate regressions. As I mentioned in the methodology part, the board change variable is a lagged by one quarter to avoid simultaneity.

Results in the first column show that on average being a state controlled firm does not have any significant effect on performance. However, in line with the first hypothesis, (H1), state controlled firms perform better than non-state controlled firms during political uncertainty.

With respect to renovating relational connections, the result demonstrates that on average changing the board of directors is positively correlated with performance. However, board change during political uncertainty harms performance. The result shows that board change in the previous quarter is positively correlated to firm profitability. However, board change is negatively correlated to firm profitability if this change is taken by firms operating in regulated industries. In contrast changing boards by firms during the period of political uncertainty have an opposite effect. That is while change of boards has an overall negative effect, the effect becomes positive it is in regulated industries. The result also lends support to the second hypothesis (H2).

Insert table 3 about here

To understand the relationship better, I present the results of the full model in which both state ownership and changing boards with full interaction in table 4. Column I-III present result in which the boards change refers to different types of boards. In column I board change refers to changes either in executive or non-executive boards. Column II and III present a separate regression for executive board change and non-executive board change respectively. The board change is lagged by one quarter.

In line with hypothesis 1, the effect being a government controlled firms during political uncertainty is positively associated with firm profitability. Supporting hypothesis 2, the results in column I and II in table 4 demonstrate that changing board of directors by firms in regulated industries after the government change has a positive effect on firm performance. However, board change in regulated industries by state controlled firms has a negative or no effect at best on return on asset. This result points two main things. First, political connections that are established at structural level might be substituting the effect of relational political connection. Secondly, the motivation behind changing the board of directors for state controlled firms might not be meant to strategically benefit the firm. It rather could be that when new political parties take position, they bring likeminded people to take positions in government controlled firms.

However, the fact that board change during political uncertainty also has a negative effect on return on asset to all firms regardless who controls the firm or which industry the firm operates in might be an implication that board change costs firms. Given that the uncertainty has emanated mainly from political uncertainty, changing boards harms performance unless it is in regulated industries in which the benefit of renovating their connection overweighs costs associated with learning to work with new boards and leverage on the social and political capital a new board brings to the boardroom.

Insert table 4 about here

Consistent with this argument, one of the main role of the board of directors in regulated industries to renovate political connections. This connection is relevant if firms are not structurally connected. If they have a structural connection, changing boards might not have any additional benefit, in fact it might cost them since both the old and the new board members have to learn how to work together and leverage on this benefits. So the fact that we do not observe a positive effect on changing the board of directors in regulated firms by state controlled firms might be the substitution effect. Collaborating this explanation, the results suggest that changing boards in regulated industries is positively related to firm's profitability. However, government owned firms that make the change in their boards in these industries following the political uncertainty have suffered loss or gained nothing at best.

To further make sense of the positive effect of changing the board of directors by firms operating regulated industries, I did a separate analysis of this effect on family controlled firms. The idea being that family controlled firms would be very strategic in deciding which board to replace and how that would help them to get connected with the new political regime. Table 5 shows that the effect of changing boards of directors in regulated industries depends on the type of board changed. Family controlled firms in regulated industries benefits from changing the non-executive board of directors than executive once. This could be because the executive board members are also family members who will not be removed for the sake of renovating the board for new political connections. Similar to this logic, while the overall effect of changing boards in regulated industries is not any more significant after we account for the board change in regulated industries by family firms, the positive effect of the executive board changes is important on average for all firms.

Insert table 5 about here

Overall, the result suggests that state controlled firms (firms which are structurally connected) have performed better during the period of political uncertainty compared to firms which are not controlled by the state. These firms are structurally connected to the state and their benefits of political connections are sustained irrespective of the political uncertainty. Second, firms which also renovate their relational connection by changing their board of directors perform better during the period of political uncertainty than those which do not makes changes in their boards. However, the benefit is restricted to a niche industry (in regulated industries).

Firms which are structurally connected do not benefit from changing their board of directors. It appears that there is substitutions effect between structural and relational political connections. Firms which are structurally connected will not benefit from relational connections. In fact the change in the corporate governance might reduce performance due to the learning cost for new boards. Therefore, changes in the board of directors for firms owned by the government might be a cost than a benefit. First because the firm is politically connected to state by virtue of ownership and second the placement of the boards might be driven by other factors not related to merit.

The benefits of political connection are stronger when it emanates from structural than relational connection in terms its outreach. In a sense that the benefit of being structurally connected during political uncertainty is not restricted to firms in regulated industries. However, in terms of the strength of the benefit, returns from relational connections appear slightly stronger albeit in a niche industry. This is also evidenced by the fact that family firms which make changes in their board have improved their performance if they are in a regulated industry compared with the performance improvement of firms owned by the government. That is while the domain of benefit from relational connections is very specific to particular industries the benefit is stronger. Structural connection: Firms which are controlled by government owned firms have performed better after the first drastic government change set in. This result persists with the inclusion of all controls and changes in the board of directors. Column2 presents the relationship between board change and firm performance.

Robustness checks

At this preliminary stage, I addressed two main issues regarding the results we observe. The first is whether the relevance of structural connection or renovating the relational connection during political uncertainty matter for state controlled and family controlled firms or state controlled business group affiliates and family business group affiliates. This is an important question given the fact that my previous study has shown that family business groups are the main losers at least during the first round of the government change. To test this a run a separate regression for structural and relational connections. For the first, I run a regression in which both business groups, state controlled business groups and state controlled firms are included together with the standard controls I have in the other regression. What I found is that the state group affiliated firms are not benefiting much during political uncertainty. However, the positive effect of political uncertainty for state controlled firms also appears to have a very weak effect. What I can draw from this result is that the group effect does not appear to explain the positive association between state controlled firms and performance during political uncertainty. Similarly, since changing the non-executive board of directors is particularly relevant for family firms, I also did a similar analysis to know if this change is relevant for family business group affiliates or just for family firms. I run a separate regression for firms in regulated and non-regulated industries to avoid the number of interactions. The result shows that the effect of changing non-executive boards during regime change is positive for family controlled firms indicating that family group affiliates are not particularly benefited from changing the boards.

Second, I used a different measure of board change to test the robustness of the result. The results are robust and stronger, when I use the concurrent board changes than the lagged board change. The result remains significant when I used a centered measure of board change instead of the dummy variable.

CONCLUSION

Environmental uncertainty affects organization structure, survival, success and growth (Koberg and Ungson 1987; Koberg, 1987). Uncertainties mainly emanate from changes in the external environment such as competition, technological changes, regulatory changes etc. Previous studies have focused on two interconnected mechanism by which organizations manage their environment: Structural and leadership. The structural contingency approach posits that organizations design their structure to fit to the prevailing environment. Organizations with organic structure thrive under conditions of high environmental uncertainty while those with mechanistic structure perform better in stable environment (Burns and Stalker, 1961). Recent studies suggest that successful organizations are ambidextrous. They need to have a structure that enables to be both efficient in utilizing existing resources and knowledge bases without losing the foresight and commitment to accommodate radical changes (O'Reilly and Tushman, 2004).

Complementary to this approach is the idea that organizations manage environmental uncertainty by changing the composition of their top management, board of directors. The underlying argument is that organizations depend on their environment for resources, and the nature, type and extent of resource dependence is affect as environment changes. One way by which organizations manage uncertainties arising from such a change is by adjusting their linkage with the environment. Board members serve as a mean of adjusting this linkage to align the organization with the unveiling resource dependence. Therefore, organizations are able to reduce uncertainty by changing their board of directors in response to the change in their environment. With specific reference to political environment, a lot of studies have shown that firms use their board of directors to maintain political connection and gain influence rent.

By broadening the concept of political connection to encompass structural connections, connections that arise from state control of firms, this study provides evidence that, during frequent regime change, firms that are structurally connected with the state perform better than those with no structural connection. Second, Firms with no structural connection reduces uncertainty and improve performance by renovating their relational connection (changing

their board of directors) especially if they are in regulated industries. Using the exogenous shock that triggers the change in board of directors I also reduce the problem of endogeneity in estimating the effect board composition on performance.

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Table 1Summary statistics

	N	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12
ROA(1)	2634	0.08	0.11	1											
Government controlled firms (2)	5565	0.31	0.46	0.06	1										
Lagged director change(3)	5406	0.1	0.3	0	0.06	1									
Lagged executive director change (4)	5406	0.05	0.22	0.01	0.06	0.69	1								
Lagged non-executive board change (5)	5406	0.07	0.25	-0.01	0.03	0.81	0.3	1							
Family controlled firms (6)	5565	0.42	0.49	0.08	-0.57	-0.04	-0.03	-0.03	1						
Concentrated ownership (7)	5565	0.84	0.33	0.14	0.3	0.02	0.02	0	0.38	1					
Regulated industries (8)	5578	0.45	0.5	-0.2	-0.01	0.03	0.01	0.03	-0.18	-0.2	1				
Dummy for political uncertainty (9)	5565	0.31	0.46	-0.14	0	0.25	0.12	0.24	0	0	0	1			
Log of firm age(10)	5529	3.27	0.69	0.02	0.25	0.05	0.03	0.04	-0.09	0.21	-0.19	0.12	1		
Log of assets (11)	3371	4.83	1.85	0.09	0.06	0.08	0.05	0.06	0.01	0.2	0.21	0.07	-0.09	1	
Foreign controlled firms (12)	5578	0.10	0.32	0.23	-0.18	-0.01	0	-0.01	0.14	0.15	-0.04	0	-0.07	0.18	1

Table 2. Change in boards on government change and firm characteristics (linear Probability Model)

	I	II	III
Regime change	0.111**	0.064**	0.074**
	(0.046)	(0.031)	(0.035)
Family controlled firms	-0.047	-0.019	-0.046 *
	(0.031)	(0.023)	(0.027)
Family controlled firms after regime change	0.046	-0.005	0.051
	(0.052)	(0.034)	(0.042)
Family firms in regulated industries after Regime change	-0.063	-0.009	-0.051
	(0.067)	(0.042)	(0.054)
Family firms in regulated industries	0.023	0.004	0.016
	(0.037)	(0.026)	(0.028)
State controlled firms	-0.028	0.017	-0.059**
	(0.034)	(0.025)	(0.028)
State controlled firms after regime change	0.041	-0.010	0.064
	(0.060)	(0.038)	(0.047)
State controlled firms in regulated industries	0.051	0.001	0.050
	(0.040)	(0.028)	(0.032)
State controlled owned firms in regulated industries after Regime change	0.104	0.053	0.060
	(0.086)	(0.049)	(0.071)
Firms in regulated industries	-0.002	0.015	-0.012
	(0.028)	(0.020)	(0.024)
Firms in regulated industries after regime change	-0.031	-0.041	-0.004
	(0.055)	(0.035)	(0.043)
Ownership concentration	0.019	0.023	0.011
	(0.028)	(0.017)	(0.027)
Log of firm age	0.004	0.004	0.003
	(0.011)	(0.008)	(0.010)
Log firm assets	0.011**	0.001	0.010**
	(0.005)	(0.003)	(0.004)
Foreign controlled firms	-0.024	0.002	-0.019
	(0.024)	(0.015)	(0.018)
Constant	0.019	0.001	0.018
	(0.044)	(0.030)	(0.037)
R2	0.06	0.02	R2 0.05
N	3,371	3,371	3,371

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

In column I the dependent variable is change in boards (both executive or non-executive boards). In column II & III the dependent variable is change in executive and non-executive boards respectively.

Table 3. RoA on state control and board change

	I	II	III	IV
State controlled firms	0.004 (0.025)			
State controlled firms after regime change	0.057*** (0.021)			
State controlled firms in regulated industries	-0.022 (0.034)			
State controlled firms in regulated industries after Regime change	-0.014 (0.038)			
Board change in state controlled firms after regime change				
Board change in state controlled firms				
Board change after regime change		-0.037** (0.019)	-0.058*** (0.022)	-0.017 (0.023)
Board change		0.041*** (0.014)	0.054*** (0.016)	0.031* (0.019)
Board change in state controlled firms in regulated industries				
Board change in state controlled firms in regulated industries after regime change				
Board change in regulated industries		-0.033* (0.020)	-0.066*** (0.021)	-0.020 (0.027)
Board change in regulated industries after regime change		0.030 (0.027)	0.079*** (0.027)	0.007 (0.032)
Ownership concentration	0.012 (0.021)	0.016 (0.022)	0.016 (-0.022)	0.015 (0.022)
Regulated industries	0.041 (0.043)	0.068* (0.038)	0.07* (0.038)	-0.012 (0.019)
Regulated industries after regime change	0.002 (0.013)	-0.008 (0.017)	-0.011 (-0.017)	-0.011 (0.018)
Regime change	-0.016 (0.044)	0.005 (0.046)	0.004 (-0.046)	0.005 (0.046)
Log of firm age	0.000 (0.011)	0.001 (0.011)	0.001 (-0.011)	0.001 (0.011)
Log of firm asset	0.006 (0.004)	0.007 (0.004)	0.007* (0.004)	0.007* (0.004)
foreign ownership	0.070*** (0.026)	0.060** (0.026)	0.059** (0.026)	0.061** (0.026)
Industry and time dummies	Yes	Yes	yes	yes
Constant	-0.029	-0.051 (0.073)	-0.051 -0.073	-0.05 (-0.074)
R^2	0.28	0.26	0.26	0.26
N	2,279	2,279	2,279	2,279

  * p<0.1; ** p<0.05; *** p<0.01

In column II, board change refers to change in either executive or non-executive boards. Column III& IV present the result of a separate estimation of the effect of change in executive and non-executive boards respectively. Board change is lagged by one quarter.

Table 4. RoA on state control and board change with all the interactions.

	I	II	III
State controlled firms	-0.001 (0.025)	0.002 (0.025)	0.001 (0.025)
State controlled firms after regime change	0.053** (0.021)	0.058*** (0.021)	0.050** (0.020)
State controlled firms in regulated industries	-0.023 (0.037)	-0.022 (0.036)	-0.023 (0.035)
State controlled firms in regulated industries after Regime change	0.006 (0.044)	-0.013 (0.039)	0.002 (0.041)
Board change in state controlled firms after regime change	0.021 (0.039)	0.027 (0.046)	0.039 (0.040)
Board change in state controlled firms	0.023 (0.032)	-0.027 (0.036)	0.019 (0.048)
Board change after regime change	-0.047* (0.028)	-0.082** (0.036)	-0.027 (0.036)
Board change	0.030 (0.024)	0.072** (0.030)	0.015 (0.032)
Board change in state controlled firms in regulated industries	0.032 (0.049)	0.050 (0.045)	-0.106 (0.071)
Board change in state controlled firms in regulated industries after regime change	-0.113* (0.063)	-0.069 (0.055)	0.012 (0.058)
Board change in regulated industries	-0.040 (0.029)	-0.091** (0.036)	-0.018 (0.036)
Board change in regulated industries after regime change	0.067* (0.035)	0.113** (0.044)	0.041 (0.042)
Ownership concentration	0.012 (0.021)	0.013 (0.021)	0.012 (0.021)
Regulated industries	0.049 (0.043)	0.045 (0.042)	0.047 (0.044)
Regulated industries after regime change	-0.003 (0.014)	-0.002 (0.013)	-0.001 (0.014)
Regime change	-0.018 (0.042)	-0.016 (0.044)	-0.018 (0.043)
Log of firm age	0.000 (0.011)	-0.000 (0.011)	0.000 (0.011)
Log of firm asset	0.006 (0.004)	0.006 (0.004)	0.006 (0.004)
foreign ownership	0.070*** (0.025)	.070*** (0.025)	0.070*** (0.025)
Industry and time dummies	Yes	Yes	yes
Constant	-0.027 (-0.07)	-0.03 (-0.071)	-0.029 -0.071
R^2	0.28	0.28	0.28
N	2,279	2,279	2,279

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

In column I, board change refers to change in either executive or non-executive boards. Column II& III present the result of a separate estimation of the effect of change in executive and non-executive boards respectively. Board change is lagged by one quarter.

Table 5. RoA on family control and board change with all the interactions.

	I	II	III
Family controlled firms	0.024	0.022	0.020
	(0.022)	(0.022)	(0.022)
Family controlled firms after regime change	-0.030*	-0.035**	-0.027
	(0.018)	(0.018)	(0.017)
Family controlled firms in regulated industries	-0.029	-0.031	-0.025
	(0.031)	(0.030)	(0.030)
Family owned firms in regulated industries after Regime change	-0.006	0.008	-0.009
	(0.028)	(0.027)	(0.028)
Board change in family owned firms after regime Change	-0.007	-0.024	-0.049
	(0.044)	(0.051)	(0.056)
Board change in family owned firms	-0.033	0.013	-0.004
	(0.035)	(0.040)	(0.047)
Board change after regime change	-0.034	-0.057**	0.001
	(0.027)	(0.026)	(0.032)
Board change	0.056 ***	0.056***	0.037*
	(0.018)	(0.018)	(0.020)
Board change by family owned firms in regulated industries	0.003	0.008	-0.046
	(0.044)	(0.047)	(0.058)
Board change by family owned firms in regulated Industries after regime change	0.088*	0.047	0.155**
	(0.051)	(0.057)	(0.067)
Board change in regulated industries	-0.044	-0.075***	-0.017
	(0.028)	(0.024)	(0.031)
Board change in regulated industries after the shock	0.008	0.072 **	-0.035
	(0.036)	(0.032)	(0.041)
Ownership concentration	0.022	0.022	0.022
	(0.024)	(0.024)	(0.024)
Regulated industries	0.075*	0.079*	0.071*
	(0.042)	(0.041)	(0.042)
Regulated industries after the shock	-0.012	-0.021	-0.008
	(0.024)	(0.023)	(0.023)
Regime change	0.015	0.021	0.013
	(0.046)	(0.047)	(0.046)
Log of firm age	-0.001	-0.001	-0.001
	(0.012)	(0.012)	(0.012)
Log of firm asset	0.008*	0.008*	0.008*
	(0.004)	(0.004)	(0.004)
Foreign controlled firms	0.059**	0.057**	0.059**
	(0.024)	(0.024)	(0.024)
Industry and time dummies	Yes	Yes	yes
constant	-0.052	-0.055	-0.052
	(-0.076)	(-0.076)	(-0.076)
R2	0.27	0.27	0.27
N	2,279	2,279	2,279

 * p<0.1; ** p<0.05; *** p<0.01

In column I, board change refers to change in either executive or non-executive boards. Column II& III present the result of a separate estimation of effect of changes in executive and non-executive boards respectively. Board change is lagged by one quarter.

FUTURE RESEARCH DIRECTIONS

In my dissertation, I investigated how distinct firm governances, especially ownership structure, affect the choice of rent appropriation mechanisms as well as adaptation to political uncertainty. The role of corporate governance on the choice of rent seeking or value adding strategies may not necessarily be restricted to the choice of political strategies. The same choice process might as well be reflected in other strategic decisions related to market positioning, innovation and competition strategies. There are many unanswered questions in relations to corporate governance and firm competitiveness that I would like to pursue.

Given that the context in which the role of business groups is investigated is a very small economy, an interesting extension is to understand the institutional level contingencies that moderate the choice between rent seeking vs. value adding strategies of business groups. In connection with this, currently I am working on a project that covers European firms' invention, patenting and use of inventions. I am interested to understand how corporate governance, specifically, affiliation to business groups and family business groups as well as the composition of the board of directors affect the organization of innovation, patenting motivation and strategic utilization of invention outcomes. Moreover, I would like to understand how political institutions moderate the relationship between corporate governance and invention behavior of firms.

Parallel to this, we also observe that there are businesses groups from emerging economies that are becoming internationally successful where political connection in the home country is less valuable in the host markets. This poses many interesting questions. The first is to know which type of business groups prefer to rely on political connection and remain local and which one chooses to develop their competitiveness and become international? Second, is there a stage in the development of the rent appropriation mechanism of groups such that they initially rely on political connection and at some stage focus on developing their competitiveness in the market? Or are there any trade off or complementarity between market and non-market strategies in the long run competitiveness of group affiliated firms?

Despite the fact that business groups represent large share of their economies in many emerging countries, and that they are arguably considered to be the right organizations forms for the prevailing institutional features, we have little understanding as to how their presence affect the growth of institutions in the long run. In countries where groups are highly represented, do they influence the development of market supporting institutions? Do they promote or deter the growth of these institutions? As a first stage, I would like to understand if there is a difference between group affiliated and standalone firms in their propensity to disclose information such their corporate governance and financial information that would help the functioning of markets for finance, corporate control, and managers. The information disclosure could be mandatory or voluntary.