Bribery and corruption: their relationships with resource constraints, innovation and OFDI

BRIBERY AND CORRUPTION:

THEIR RELATIONSHIPS WITH RESOURCE CONSTRAINTS, INNOVATION AND OFDI

By

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DELARATION

I hereby certify that this thesis is my original work. It has neither been previously accepted for the award of any degree nor being concurrently submitted for any other degree.

Chong ZHONG

MARCH 2021

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CHAPTER ONE

Introduction

1.1 Background of the Thesis

The historical and geographical pervasiveness of bribery and corruption has generated a lot of interest in their determinants, consequences, and how to control them (see reviews in Bahoo, Alon, and Paltrinieri, 2020; Cuervo-Cazurra, 2016). The widely acknowledged definition of corruption is "the misuse of public power" (Svensson, 2005), whereas it can be analyzed from either the "demand-side" (receive bribes) or the "supply-side" (give bribes). On the supply-side, bribery will be seen as the non-market strategy to solve problems, while on the demand-side, most literature explores the influence of corrupt environment on firms' behavior or performance. Therefore, the analysis of bribery and corruption refers to two aspects: firms' strategy of bribery and environment of corruption.

Traditionally, bribery is viewed as an unethical behavior since it is used to pursue private advantages over public benefits. Scholars believe that corruption is a kind of issue that should be eliminated completely since it erodes fairness and justice, and lowers economic growth (Mauro, 1995). However, from firms' perspective, the function of bribery is complex. Some researchers take a more pragmatist viewpoint about bribery, arguing that bribery experience is a kind of competitive advantage in a corrupt country (Cuervo-Cazurra and Genc, 2008), or a tool to reduce transaction costs and facilitate operation (Krammer, 2019). The debate about whether corruption "sands the wheel" or "greases the wheel" continues, but the motivation of taking bribes as a strategy has not been explored enough, especially when the related factors

from different layers are a lot. On the other side, although the extant literature views the corrupt environment as detrimental for firms or the economy as a whole, how the corrupt environment will influence firms' specific strategies has received little attention.

1.2 Research Questions of the Thesis

As explained above, bribery is a non-market strategy used by a firm to solve problems. However, it is unclear how this strategy interacts with its business environment where government can play an active role in business and where corruption can be pervasive, and how this interaction is related to the firm's other strategies such as innovation and outward foreign direct investment (OFDI). As a result, my general research question is: what are the relationships between a firm's strategies such as bribery, innovation and OFDI and its business environment such as government behavior and corruption? Given my focus, this grand research question can be divided into the following three specific questions:

1. How does a specific actor (i.e. government) in the environment influence firms' decision to bribe; in other words, why do firms take bribery as a non-market strategy when government imposes constraints on firms?

2. How does firms' strategy (innovation) trigger bribery as a problemistic search under a specific environment (e.g., an emerging market)?

3. How does the change of corrupt level in the environment influence firms' strategy (OFDI)?

First, most studies of supply-side bribery undertake an assumption that managers are forced or at least reluctant to pay bribes to government officials who have the discretion to deal with some problems firms concern. However, this assumption may not always be correct, and

firms may volunteer to do so. Besides, other studies about managers' incentives to offer a bribe by focusing on specific benefits firms can derive from bribery, such as obtaining government contracts or gaining advantages over competitors, while I try to discuss a more generalized situation referring to the asymmetric power relationship between firms and government. I would like to study whether bribery can be used as a non-market strategy by managers to counterbalance their power relationship with governments, especially when other legal political ways cannot be utilized. In other words, I attempt to discuss a baseline relationship between firms and government in paper 1 (Chapter 2).

Second, the relationship between innovation and bribery has drawn scholars' attention recently, whereas the empirical evidence is not consistent with what we observe in reality. On the one hand, corruption impedes innovation since it discourages constructive investments. On the other hand, the related literature reveals that the introduction of new products in developing countries will cause more bribes since innovative firms are vulnerable (Krammer, 2019). These two arguments together suggest that the innovation ranking of a nation can be improved if it is stuck in a corrupt situation. But the reality is reverse for some emerging economies such as China, Vietnam, and Thailand. I try to solve this puzzle in paper 2 (Chapter 3).

Third, although the corruption of a nation changes over time, few studies pay attention to the effect of corruption control. In the limited literature, the focus is on anticorruption laws of developed countries, while the endeavor of combating corruption from the developing world receives less attention. In the international business (IB) area, studies have proven that less

corrupt countries will attract more FDI, but the effect of anticorruption on OFDI has not been explored yet. In paper 3 (Chapter 4), I use a recent anticorruption campaign in China to examine its influence on private-owned enterprises (POEs)' OFDI decisions.

1.3 Theories in the Thesis

In this thesis, I go beyond traditional research that provides a consistent theoretical framework throughout. Instead, I study the topic of bribery and corruption from a multi-perspective and extend not only my understanding of the topic itself but also my understanding of related theories by analyzing bribery and corruption (see Table 1.1). In paper 1 (Chapter 2), I use resource dependence theory to discuss how a specific actor (government) influences firms' strategy to bribe. Based on the sociological perspective, resource dependence theory provides a theoretical framework about how the context influences organizational behavior. The context can be analyzed in a specific way, which is suitable to answer question 1: how does a specific actor (i.e. government) in the environment influence firms' decision to bribe, as it is one of the leading and well-equipped theories that have discussed the basic relationship between firms and government regarding the power relations (Cuervo-Cazurra, 2016). In turn, through linking the legal and illegal non-market strategy, I extend the application of resource dependence theory from explaining corporate political activities to illegal actions such as bribery. In paper 2 (Chapter 3), I capture a recent research trend that firms tend to view bribery as a problemistic search to deal with negative feedback (Mishina *et al.*, 2010; Xu, Zhou, and Du, 2019) to answer research question 2: how does firms' strategy (innovation) trigger bribery as a problemistic search under a specific environment (emerging markets). The

behavioral theory of the firm emphasizes that the environment condition is a critical factor that will influence firms' decision-making with an examination of the internal operation of the firm. Different from question 1, I look into the relationship between two strategies (innovation and bribery) considering the influence of environment (emerging markets) as a holistic context, and how the environment affects firms' internal decision processes. The behavioral theory of the firm is not a traditional theory to understand bribery or corruption embedded in the relationship between firms and government like paper 1. However, it is instrumental to understand bribery from the perspective of the firm when the assumption that firms are rational and act according to the measurement of costs is relaxed. On the other hand, by extending the definition of negative feedback and borrowing ideas from the general strain theory in sociology, I attempt to improve the theoretical argument of the behavior theory of the firm. Finally, I discuss the topic of corruption control in paper 3 (Chapter 4) by using a widely used theoretical scaffold – institutional theory to answer question 3: how does a specific factor (corrupt change) in the environment influence firms' strategy (OFDI). Institutional theory is quite popular to examine how firms adapt to the environment for legitimacy or efficiency to survive or prosper. In this paper, I would like to use institutional theory to investigate how the change of corrupt level in the environment will influence the firms' internationalized strategy (i.e. OFDI). I explicitly differentiate between the two sources of institutional theory from the sociological and economic point of view, and then integrate them under a unified theoretical framework of institutional dynamics and institutional complexity.

Table 1.1

Theories and their Applications in the Thesis

表格 0.1

Chapter	Theory	Founders and Proponents	Disciplinary Basis	Core Logic	Central Argument	Application to Bribery Analysis
Chapter 2	Resource Dependence Theory	Pfeffer and Salancik, 1978	Sociology	Power	Resource constraints impose a power imbalance between parties.	Firms supply bribes to counterbalance their inferior position with a government which controls critical resources firms need.
Chapter 3	Behavior Theory of the Firm	Cyert and March, 1968	Economics	Bounded Rationality	Firms take strategies with bounded rationality caused by information asymmetry and individual preferences.	Firms use bribery as the problemistic search to deal with the anticipated negative feedback of a previous strategy.
Chapter 4	Institutional Theory	North, 1990	Economics	Efficiency	Institutional arrangements increase or decrease transaction costs.	Decreasing domestic transaction costs, the anticorruption campaign slows down OFDI driven by institutional escapism under the circumstance that the “go global” policy promotes OFDI.
		DiMaggio and Powell, 1983; Scott, 1995; Oliver, 1991	Sociology	Legitimacy	Individuals will behave isomorphically to gain legitimacy under institutional pressure.	

1.4 Linkage and Summary of the Thesis

Since I try to explore the relationships between a firm's strategies (i.e. bribery, innovation and OFDI) and its business environment (i.e. government behavior and corruption) from multi-facets, the three papers aiming to answer three specific questions outlined in section 1.2 are linked by three levels of bribery/corruption data: individual-level, firm-level and provincial level as shown in Figure 1.1.

Paper 1: The determinants of bribery from the perspective of a firm as the supply-side; and its relationship with corporate political activities such as lobbies and political ties are proven by the **individual-level** data from World Value Survey.

In paper 1 (Chapter 2), I adopt a resource dependence perspective to explore the supply-side bribery, arguing that managers are motivated to use illegal non-market strategies to counterbalance their position confronting resource constraints imposed by government. However, if the channel of legal tactics is at play, the positive relationship between resource constraints and bribery will be mitigated since firms can use legal non-market strategies to achieve the same goals. What kind of strategy will be taken is determined by resource slack firms have.

Paper 2: Bribery as a firm's problemistic search under the pressure of anticipated negative performance, and its relationship with innovation in developing countries supported by the data of **firm-level** from World Bank Enterprises Survey.

In paper 2 (Chapter 3), I find that investing in R&D will result in bribery in developing countries where unfavorable factors diminish expected returns. It confirms that the

discrepancy between the expectation of innovation and the estimation of its actual achievement is a source of illegal behavior. However, a firm's experience of R&D output will mitigate its tendency to bribe since it has accumulated relevant knowledge. In addition, to extend the boundary of the behavior theory of a firm (BTOF), I borrow ideas from the general strain theory (GST) in sociology, which identifies two other mechanisms of illegal behavior of organizations: the discrepancy between aspirations and expectations; and the discrepancy between fair outcomes and unfair outcomes.

Paper 3: The influence of combating corruption in the home country on a firm's OFDI decision. Anticorruption data are from the **provincial level**.

In paper 3 (Chapter 4), I argue that while institutional support promotes aggregate OFDI from China, the recent anticorruption campaign negatively affects private enterprises' OFDI as it mitigates the motivation of institutional escapism. The anticorruption campaign plays the role in slowing down OFDI through decreasing domestic transaction costs by improving financing efficiency and breaking down local protectionism. Based on the perspective from institutional complexity and dynamics, I explore how a change in one facet of institutions influences joint institutional forces and hence a firm's OFDI decision.

Figure 1.1 Framework of the Thesis

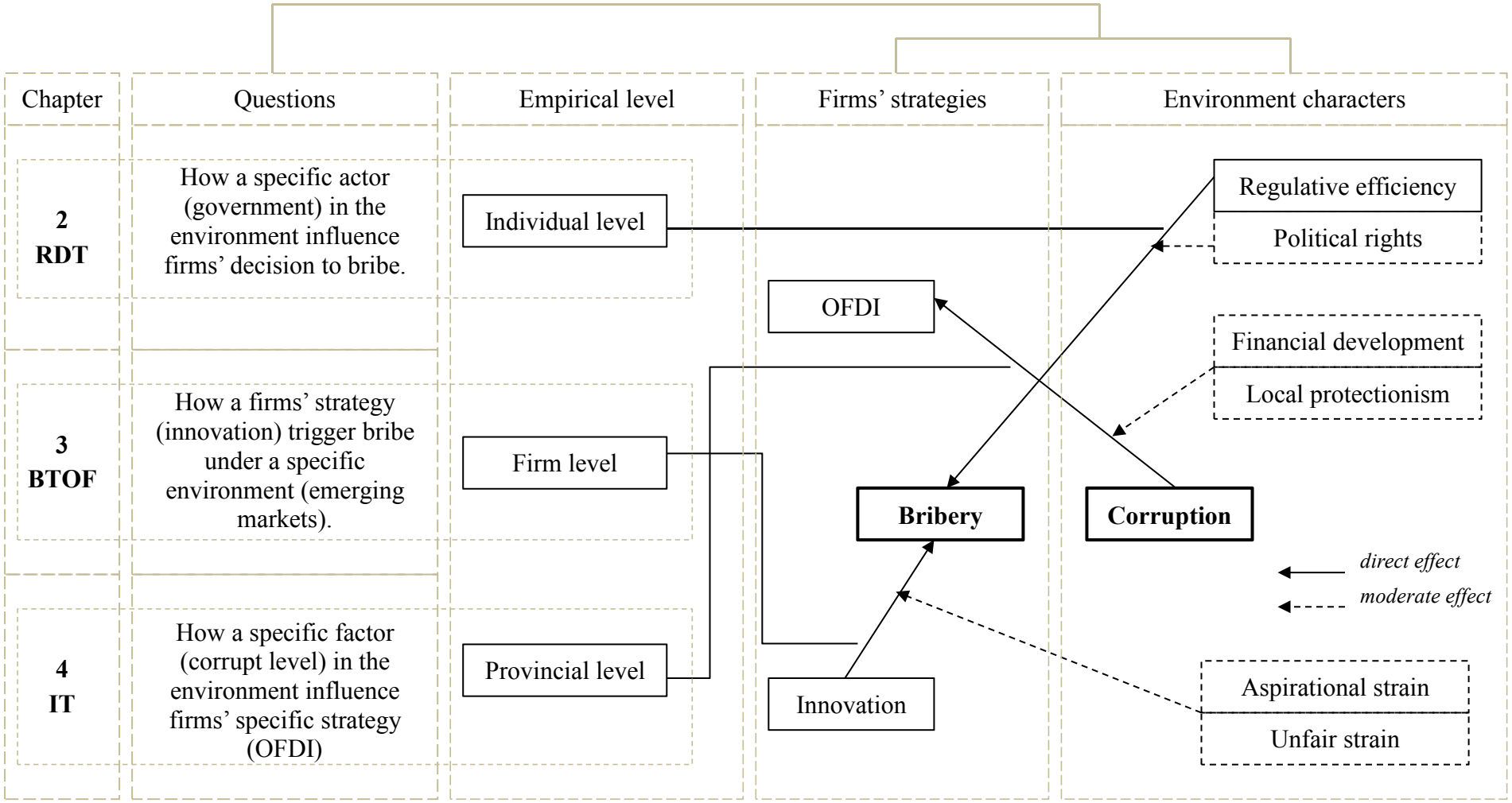

图 1

1.5 Research Methodology

As this thesis incorporates three papers with a format suitable for publication in peer review journals, each of the papers includes a method section which shows details of the empirical techniques in terms of data collection, analysis, and results. Here, I present the fundamental philosophical/theoretical underpinning of the methods, as well as the summary of all the specific techniques used in this thesis. The procedure of discussion follows the Figure 1.1.

Figure 1.2

Four Elements of Research Methodology

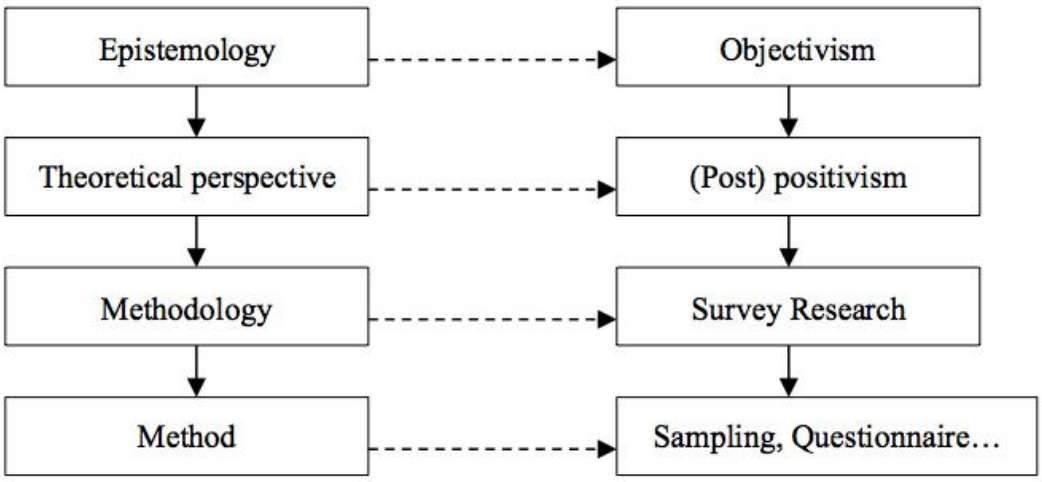

图 0- 2

1.5.1 Philosophical Underpinning

The philosophical underpinning of methods is an overall guidance of research that determines how research problems can be solved and whether research objectives can be achieved. The research design, including data source, data collection, data analysis, and data interpretation, is fundamentally predetermined by researchers' assumption about their attitude towards the world, and in what way they explore the world (O'leary, 2004). In other words, ontology related to the nature of reality or being, and epistemology concerning how the reality can be

uncovered, jointly decide the specific approach used in research. If someone believes that reality or knowledge exists outside human consciousness, such researchers hold the realist ontology, and normally epistemology of objectivism in which the reality can be investigated through objective procedures will be adopted. On the other hand, if someone thinks that there is no objective truth or object does not make any contribution to the generation of meaning, the epistemological assumption about how to do research may follow the guidance of constructivism or subjectivism (Crotty, 1998). Thus, the specific methodology I chose will be largely influenced by my ontological assumption about what is and the epistemology assumption about how we know what we know.

1.5.2 (Post-) positivism, Falsification and Deduction

Based on different philosophical underpinnings, theoretical perspectives behind the specific research approach can be categorized into (post-) positivism, constructivism, interpretivism, postmodernism, and so on. In this research, I adopt the perspective of (post-) positivism that offers "unambiguous and accurate knowledge of the world" (Crotty, 1998: 18) since I believe that bribery is an objective phenomenon that can be studied through proper scientific procedures. Following the requirements of (post-) positivism, two points toned to be emphasized: 1) social facts, 2) value-free.

First, in chapter 2, I measure managers' justification about bribery in scores, whereas managers' perception or attitude towards an ethical issue is normally considered to be subjective. Why can I measure a subjective answer with objective scores, and then these scores represent a reality of a nation? It refers to a concept called social facts. Durkheim

(1982) defined social facts as ways of acting, thinking, and feeling that transcend the individual, and thus exist independently apart from people's consciousness. Social values, cultural norms, and ethical issues are collectively objective realities and should be researched empirically. Consistent with this argument, I can measure the level of bribery perception in a nation by asking people's subjective feelings about the justification of bribery as long as the sampling is representative according to the statistical principle. In chapter 3, the measurements of aspirational strain and unfair strain of a nation are based on the same theoretical perspective.

Second, I take a neutral position to the possibility that firms take bribery as a strategy. According to (post-) positivism, the meaning of reality can only be explained or discovered rather than created as not only the nature of being is objective, but also the way we know things is value-neutral. Guba and Lincoln (1994: 108) state that "a 'real' reality is assumed, the posture of the knower must be one of objective detachment or value freedom to be able to discover 'how things really are' and 'how things really work'". Even though researchers will inevitably put personal judgment on theoretical assumptions or interpretations of results, we need to be aware of this issue that is not advocated under the guidance of (post-) positivism and should try to avoid it as far as possible.

During the development of positivism, how we know the knowledge and meaning has been evolved from verification to falsification. Wittgenstein proposes that there is no knowledge or meaning unless it can be verified by experience through our senses. This notion called "verification" was embraced by the Vienna Circle at the first beginning but challenged by

some scientists who met the opposite situation in natural science. From a positivist point of view, statements cannot be accepted as facts or meaningful unless the empirical observation verified them. But in reality, many theories exist and are commonly accepted which have not been directly observed or tested at all.

Popper (1934) then points out the weakness of verification and logical fault of induction that no matter how numerous examples of corrections are given, we cannot confirm a certain conclusion. Instead of providing empirical evidence of right, the key point of science is to prove it wrong. Falsification believes that we can only accept a theory to some extent if a theory cannot be rejected empirically. Therefore, the standard procedures of deduction are widely used in the current academic field, and are followed by all three papers in this thesis as well: 1) proposing a theory; 2) giving hypothesis from the theory; 3) testing hypothesis by empirical data, and trying to prove it wrong. I prefer to accept the notion of falsification and logic of deduction since "this is a less arrogant form of positivism. It is one that talks of probability rather than certainty, claims a certain level of objectivity rather than absolute objectivity, and seeks to approximate the truth rather than aspiring to grasp it in its totality or essence (Crotty, 1998: 29)".

1.5.3 Methodology and Method

From the view of (post-) positivism, quantitative methodologies in terms of survey research and quasi-experimental research are suitable for the acquisition of knowledge, while whether knowledge we obtain is accurate or not largely relies on research design. Table 1.2 provides some indicators of "good research" based on the requirement of (post-) positivism.

This thesis aims to explore the relationship between a firm's strategy and environment, focusing on bribery and corruption. I conduct my research under a paradigm that stems from positivism. Under this research paradigm, theories offer the basis of explanation and allow the prediction of a particular relationship. Interpretation consists of establishing causal relations between variables and linking them to a deductive theory (Collis and Hussey, 2009: Business Research, p. 56). This research paradigm is appropriate as relevant theories have been identified in 1.3 to address the three sub-research questions.

Following this philosophical framework that guides how scientific research should be conducted, the appropriate methodologies include experimental studies, survey, cross-sectional studies and longitudinal studies (Collis and Hussey, 2009: Business Research, p. 74). As in the case of theory applications of this thesis, to address different research questions different data and research methods are required.

In Chapter 2, in order to explore the question: how does a specific actor (i.e. government) in the environment influence firms' decision to bribe, I use the sample from World Value Survey and utilized the appropriate data analysis method – Tobit regression, and instrumental variables to deal with endogeneity issues. In Chapter 3, I use the sample World Bank Enterprises Survey to explore the question: how does firms' strategy (innovation) trigger bribery as a problemistic search under a specific environment (e.g., an emerging market). The shortcoming of these databases is that the questions are set in advance, and might not be the same as the research questions I would explore. In Chapter 4, I use the full sample of Chinese OFDI from the Ministry of Commence rather than subsamples such as information of listed

firms for similar reasons. But this choice of database sacrifices the analysis about the firm-level heterogeneity. The validity of conclusions refers to the detailed methods and techniques, which will be discussed in each paper.

Table 1.2

Indicators for "Good" Research, O'leary (2004)

表格 0.2

Positivist Indicators	***Post-Positivist Indicators***
Have subjectivities been managed?	
Objectivity – conclusions based on observable phenomena; not influenced by emotions, personal prejudices, or subjectivities	*Neutrality* – subjectivities recognized and negotiated in a manner that attempts to avoid biasing results/conclusions *Subjectivity with transparency* – acceptance and disclosure of subjective positioning and how it might impact on the research process, including conclusions drawn
Are methods approached with consistency?	
Reliability – concerned with internal consistency, i.e. whether data/results collected, measured, or generated are the same under repeated trails	*Dependability* – accepted that reliability in studies of the social may not be possible, but attests that methods are systematic, well-documented, and designed to account for research subjectivities
Has "true essence" been captured?	
Validity – concerned with truth value; i.e. whether conclusions are "correct". Also considers whether methods, approached and techniques actually relate to what is being explored	*Authenticity* – concerned with truth value while recognizing that multiple truths may exist. Also concerned with describing the deep structure of experience/phenomenon in a manner that is "true" to the experience.
Are findings applicable outside the immediate frame of reference?	
Generalizability – whether findings and/or conclusions from a sample, setting, or group are directly applicable to a larger population, a different setting, or to another group	*Transferability* – whether findings and/or conclusions from a sample, setting, or group lead to lessons learned that may be germane to a larger population, a different setting, or to another group
Can the research be verified?	
Reproducibility – concerned with whether results/conclusions would be supported if the same methodology was used in a different study with the	*Auditability* – accepts the importance of the research context and therefore seeks full explication of methods to allow others to see how and why the researchers

same/similar context	arrived at the conclusions

Source: O'Leary (2004). *The essential guide to doing research*. London: Sage, p(58).

Table 1.3 summarizes the specific techniques I used in this study. The additional analysis is implemented to deal with the problem of endogeneity to ensure the soundness of my research and make the outcomes convincing.

Table 1.3

The Analysis Methods in the Study

表格 0.3

Chapter	Data Source	Time	Type of Data	Main Analysis	Additional Analysis
Chapter 2	World Value Survey; The Heritage Foundation; The Freedom House	2010-2014	Cross-sectional data	Tobit regression	Instrumental Variables
Chapter 3	World Bank Enterprises Survey; World Value Survey	2006-2017	Cross-sectional data	Logistic regression	Propensity Score Matching; Instrumental Variables
Chapter 4	Ministry of Commerce; The Annual Report of People's Procuratorate	2008-2015	Panel data	Difference-in-Difference	Triple Differences

1.6 Potential Contributions of the Thesis

The thesis intends to make theoretical and practical contributions to the existing literature. From the theoretical perspective, Chapter 2 relates firms' motivation of bribery to their imbalanced-power position to government, which has implied that the phenomenon of bribery cannot be completely resolved as long as government still provides resources or services that firms need. While this illegal, non-market strategy may be used to counterbalance firms' power relationship with government, firms can also seek to change through legal, non-market strategies such as lobby or corporate political activities if the democratic channel is at play.

Thus, based on resource dependence theory, I construct a theoretical framework to explain firms' non-market strategy no matter it is illegal or legal. In Chapter 3, I extend the definition of negative feedback from the *ex post* actual outcomes to *ex ante* evaluation, and examine the function of anticipated negative feedback of innovative strategy on the problemistic search of bribery. In Chapter 4, I integrate the perspectives of institutional complexity and institutional dynamics to explore how one facet of institutions change will influence firms' OFDI decisions under the circumstance of fragmented and contending institutional pressures. As for the practical implications, the study has the potential to influence government policy of anticorruption especially in emerging markets. For managers, bribery may be viewed as an illegal but legitimate way to counterbalance inferior positions, seeking for problemistic search or decreasing transaction cost in order to survive and prosper. Thus, the findings suggest that policymakers should design policies or arrange institutions considering their relationships with firms and markets more comprehensively to mitigate the tension which may result in bribery unintentionally.

In all, the conclusions of three papers indicate that the external environment conditions will influence firms' decision to bribe, whether it is a direct effect (paper 1) or just as a context (paper 2); the control of corruption in the environment, on the other hand, will also profoundly influence firms' other strategies such as OFDI (paper 3). More importantly, the thesis shows that different theoretical underpinnings are required to analyse the topic of bribery and corruption for different relationships and at different levels. This further proves the complexity of the topic and confirms a need of broadening our vision and deepening our

thoughts about the interaction of a firm's strategy (such as bribery, innovation and OFDI) and its environment (such as government behavior and corruption).

1.7 Organization of the Thesis

The study is organized as follows: Chapter 1 introduces the background of the research, the aims and summary of the three papers, methodology, and significance of this thesis. Chapters 2, 3, and 4 present three individual papers related to the topic of bribery and corruption respectively, each of which includes an introduction, theoretical articulation, hypothesis development, method, empirical results, and conclusion. Chapter 5 discusses the overall findings, conclusions, and suggestions for further research.

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CHAPTER TWO

Power Imbalance and Supply-side Bribery: A Resource Dependence Explanation

Abstract

The pervasiveness of bribery has generated much interest in its causes, and our current understanding is limited to the demand side of corrupt government officials based on the logic of the institutional theory. Different from the existing literature, this paper adopts a resource dependence perspective to explore the supply side of bribery, arguing that managers are motivated to use illegal non-market strategies to counterbalance their position confronting to resource constraints. In addition, if the channel of legal tactics is at play, the positive relationship between resource constraints and bribery will be mitigated. Specifically, utilizing data from the World Value Survey covering 18,223 managers from 55 countries across 4 years, I find that the regulatory efficiency of a nation has a negative effect on managers' willingness to justify bribery. Strong political rights of a nation strengthen the above negative relationship, but this effect is less significant if managers work in the private sector. I intend to contribute to the existing literature by offering a more subtle perspective that accounts for the possibility that bribery can be an active strategy to overcome resource constraints imposed by power imbalance.

2.1 Introduction

The determinants of bribery have long been studied in the disciplines of economics, political sciences and sociology. In the field of management, to date, cross-national analysis has used institutional theory almost exclusively (Cuervo-Cazurra, 2006; Spencer and Gomez, 2011; Yi, Teng, and Meng, 2018). Following the logic of legitimacy, the existing research explicitly postulates that organizations need to conform to social norms and legitimize their activities in order to survive or adapt to the external pressure (DiMaggio and Powell, 1991). Therefore, bribes will be paid reluctantly in countries with high corrupt levels (Cuervo-Cazurra, 2008; Luo, 2005). In other words, in countries where there is a high demand by corrupt government officials for bribes, firms respond by paying high bribes. However, this demand side approach does not fully depict the motivations behind bribery (Lee and Weng, 2013; Martin *et al.*, 2007). In contrast to the bribery demanded by officials, the bribery initiated by business managers has received little attention in the literature. A study of "supply-side" motivations for bribery is important as it can reveal different theoretical mechanisms and practical implications from the existing "demand side" approach.

In reality, the bribery initiated by firms is prevalent. For instance, Pfizer, a leading multinational enterprise in the pharmaceutical industry, has been found to give bribes to doctors to prescribe more drugs not only in China and Russia but also in the United States and Europe over the period of a decade. Some well-known companies including Enron, Volkswagen and HealthSouth were sanctioned for bribing officials in their home countries. Moreover, empirical evidence reveals that prominent, high-performing firms are more likely

to engage into misconducts including bribery to maintain their expected performance or status, regardless of whether they operate in the developed or developing countries (Jeong and Siegel, 2018; Krishnan and Kozhikode, 2015; Mishina *et al.*, 2010). This indicates that it is a universal phenomenon that bribes can be supplied purposefully by business managers, and it can be used as a strategy to seek favors for firms. Despite prior research on consequences of active bribery such as on export (Lee and Weng, 2013) or innovation (Krammer, 2019), the determinants of "supply-side" bribery on cross-national analysis are less clear and have not been uncovered by a consistent theory.

To explore this issue, I propose to use an alternative perspective, resource dependence theory (RDT), to explain why managers may initiate bribery. RDT is an instrumental theoretical scaffold to understand non-market strategies such as lobbying (Oliver, 1991; Suchman, 1995) and political contributions (Holburn and Vanden Bergh, 2014). The core of RDT is that if A's power over B comes from the resource dependence from B on A, then B will use various strategies to balance their power relationship in order to get rid of the resource constraint imposed by A (Pfeffer and Salancik, 2003). Following this logic, I argue that the power imbalance between governments and firms will incentivize managers to counterbalance their relationship by non-market ways, whether it is legal or illegal. Bribery initiated by managers can be viewed as one kind of tactics that the power-disadvantaged party will take in order to restructure their power position and acquire resources (Casciaro and Piskorski, 2005). Different from the prevailing wisdom that institutional pressures will force one's *adaption* to the external environment, RDT emphasizes on the discretionary role of management, which

implies that managers' active bribery can be viewed as their effort to *manipulate* the external conditions (Baucus and Near, 1991; Luo, 2005; Meznar and Nigh, 1995; Schweitzer, Ordóñez, and Douma, 2004; Spencer and Gomez, 2011).

To deepen our understanding of non-market strategies and incorporate illegal and legal possibilities, I consider a key contingency: political rights. Political rights manifest the feasibility of influencing government activities and acquiring resources through a political, democratic channel. Integrating legal and illegal strategic considerations, I propose that bribery is less likely to be chosen as a strategy when managers are able to alter their resource dependency on government through a non-market but legal way. However, the choice between the two types of non-market strategies is not widely discussed in the literature. Some studies mentioned lightly that firms may be frequently involved in illicit, nontransparent transfers than engaged in legal non-market strategies such as lobbying due to relatively higher costs of the latter strategies (Birhanu, Gambardella, and Valentini, 2016). Thus, I further point out that the moderating effect of political rights is less obvious for managers who work in the private sector because of a lack of resource slack (Bourgeois III and Singh, 1983; Stan, Peng, and Bruton, 2014).

I believe that my arguments and findings contribute to academic literature in several ways. First, I develop an explanation of bribery from managers' supply side that rounds out the institutional perspective dominating in the relevant literature. Unlike prior research focusing on officials' demanding and viewing bribery as a reluctant action of managers, I offer a more subtle perspective that accounts for the possibility that bribery can be an active strategy to

overcome resource constraints imposed by power imbalance. Second, I extend resource dependence theory that has insofar been only applied to explain corporate political activities. Specifically, I offer a new framework in which I can consider legal and illegal non-market strategies simultaneously, and point out conditions upon which a particular type of strategy is chosen. Third, in the empirical part, I argue that previous research has failed to measure supply-side bribery by eliminating the effect from the demand-side. Utilizing individual-level data to capture managers' motivation to bribe, I manage to keep theoretical and empirical consistency in this research.

2.2 Theory and Hypotheses

2.2.1 Power Imbalance and Resource Constraints

Bribery has been associated with government corruption in many studies (Ades and Di Tella, 1999; Djankov *et al.*, 2002; Shleifer and Vishny, 1993; Treisman, 2007). In the field of cross-national analysis, it is conventionally to acknowledge the concept that government corrupt and misusing public authority leads to the prevalence of bribery (Cuervo-Cazurra, 2016). Government officials are more likely to demand bribes for their own benefits where legal and judicial systems are underdeveloped. Hence, individuals and firms have to pay grease in exchange for operational convenience (Krammer, 2019).

However, according to resource dependence theory, the problem does not always reside in one side. It may be caused by the asymmetric interdependence embedded in the dynamic relationships (Emerson, 1962; Jacobs, 1974; Pfeffer and Salancik, 2003). There are two parties involved in bribery: bribee and briber. Insufficient studies on motivations of the

“supply-side” of bribery make the picture incomplete (Lee and Weng, 2013). From a firm’s perspective, it is reasonable for a profitable organization to acquire resources with various methods in the best interest of the firm and its shareholders. On the other hand, acting as the gate keeper for access to some crucial resources in terms of government contracts, market access permissions and industrial policies, government will intuitively become the target of some firms and individuals (Hillman, Keim, and Schuler, 2004).

The relationship between firms and government is imbalanced or asymmetric. Specifically, firms are sources of information for government to formulate public policies, and collect revenues for government election and daily function. Government also relies on firms for employment, technique innovation, economic growth and other national welfare (Shaffer, 1995). On the other hand, firms cannot be well operated without public utilities such as electric power (Pfeffer and Salancik, 2003), licensing enacted by the authorities (Bertrand *et al.*, 2007), government contracts (Pfeffer, 1972), and industrial policies which can shape the market profoundly (Holburn and Vanden Bergh, 2014). However, the interdependence between these two entities is not in an equal position.

Pfeffer and Salancik (2003) indicate that the dependence from government to firms could be categorized in the sphere of outcome interdependence and symbiotic relationship: the achievement of the government relies on the performance of firms and both of them can be better off or worse off simultaneously. Conversely, the dependence from firms to the government may step into the definition of behavior interdependence and competitive relationship. For instance, a trade policy such as deduction in tariff may benefit the holistic

welfare but damage some specific industries or firms in terms of relative competitive disadvantage or insufficiency of resource endowment (Dunning, 1977); the bargaining power of firms will diminish when the government is nearly the only buyer in the market for a specific industry (e.g. defense industry). Thereby, the relationship between a government and an individual firm is asymmetric rather than balanced since the two conditions of asymmetric interdependence are met: first, the resources furnished by the government are crucial for business operation from industrial policies to government purchasing; second, the discretion over resources is concentrated on the government, and there are few alternatives or even no substitutes within a nation (Emerson, 1962; Pfeffer and Salancik, 2003).

Previous studies suggest that the resource constraints imposed by the stronger party, such as governmental power, cannot be solved by market strategies, but may be overcome by non-market strategies such as lobbying (Oliver, 1991; Suchman, 1995) or political contributions (Holburn and Vanden Bergh, 2014). Following this logic, I suspect that illegal non-market strategies such as offering bribes in exchange for resources from government can also be explained by a similar motivation (Lee and Weng, 2013; Martin *et al.*, 2007; Spencer and Gomez, 2011). Therefore, in this study, I propose that managers in a nation where resource constraints are severely imposed by problematic dependence on government have a greater tendency to bribe.

2.2.2 Managerial Discretion and Bribery

I argue that managers can *modify* or *create* an environment more favorable to firms given the resource constraints imposed by the external pressure of government in the line with resource

dependence theory (Pfeffer and Salancik, 2003).

Managers in a less power-advantaged position and experiencing resource constraints imposed by the imbalanced power face a high level of uncertainty. The more asymmetric dependence between them, the higher motivation from the less powerful party to restructure the dependency by engaging in constraint deconstruction with power-advantaged organizations to reduce uncertainty (Casciaro and Piskorski, 2005). In this study, the relationship between a government and individual firms is not equally important to each organizations, making the dependence asymmetrically. Resource constraints imposed by the dominant power are more likely to be mitigated through non-market actions (i.e. engaging in lobbying or corruption) in the interest of firms (Husted, 1999; Schuler, Rehbein, and Cramer, 2002; Staw and Szwajkowski, 1975). Consequently, the involvement in political activities (Hillman *et al.*, 2004) or even risky behavior such as bribing officials (Djankov *et al.*, 2002; Lee and Weng, 2013) to decrease the imbalanced dependence on government may be seen as a strategic choice to alter the external environment.

Compared to non-market but legal actions such as lobbying, bribery, in spite of the nature of illegality, builds access to resources from a government prudently and timely, and gets rid of free-riding problems stemming from the collective action theory (Hillman *et al.*, 2004; Olson, 1965; Schuler, 1996). Some studies even claim that illicit strategies are more attractive than legal, non-market strategies (Birhanu *et al.*, 2016; Hellman, Jones, and Kaufmann, 2003). In a nutshell, it is a managerial discretion that offering bribery to achieve the goals of management such as economic efficiency of firms (Szwajkowski, 1985).

Regulatory efficiency as a reflection of government power

Government power can be reflected in many aspects as a government can act as a policy maker (e.g. making policies) and a customer (e.g. purchasing products). But in the literature, there is an overlooked, though fundamentally important, role of government as a supplier of public services that could be viewed as a concrete reflection of government power. The speed and quality of public services are determined by government. Government provides public services often considering the holistic social welfare rather than only "client-orientated". For example, managers may think public services are valuable when the approval procedure is efficient, while government may think it is necessary to take time to censor all potential damages. Or when the procedure is unfairly delayed, managers are unable to solve the problem since the governmental power has already predetermined the process.

As a benevolent social planner, taking time to give market access or permit license applications through scrutiny is the responsibility of a government (Banerjee, 1997). Government acts as a necessary external monitor to prevent market failure such as providing unqualified goods or services for customers (Montiel, Husted, and Christmann, 2012). However, the benefits emanating from a moderate regulatory process may be seen as a kind of resource impediment from the perspective of managers. Bertrand *et al.* (2007) elaborate the relationship between regulatory efficiency and bribery from an experiment about allocation of drivers' licenses in India. The result shows that the bureaucratic process will induce individuals to pay direct bribes in order to acquire needed licenses or public resources smoothly and efficiently. Olken and Barron (2009) conduct a survey about bribes paid by

truck drivers to government officials at checkpoints and weigh stations on the roads to and from the Province of Aceh, Indonesia. The investigation reveals that illegal payments are positively related to the number of regulatory processes, and the level of corruption is determined by the elasticity of demand for public services. In other words, if a service is necessary and basic, a driver has a strong incentive to supply a bribe. Djankov *et al.* (2002) directly prove that the high intensity of entry regulation raises the level of corruption, and paying bribes in exchange for release from the regulation is efficient. Looking into more general regulations from receiving public services to paying taxes, the empirical results from Svensson (1999) also support the above statements. Different from the proposition that "an important reason why many of these permits and regulations exist is probably to give officials the power to deny them and to collect bribes in return for providing the permit (Shleifer and Vishny, 1993: 601)", Banerjee (1997) illustrates that government bureaucracies are associated with corruption even if the government is a welfare-oriented constituency.

Although the literature above articulates the relationship between regulations and corruption, the assumption is limited within the officials' requirement for bribes, totally ignoring managers' proactive motivations. Hence, I argue that the function of governmental regulations can be viewed from the supply perspective: the heavier the regulations with respect to doing business and the higher the inefficiency of providing public services especially for the basic ones, the stronger the managers' incentive to "get things done" and get rid of asymmetric dependence through illegal bribery.

From the viewpoint of resource dependence theory, in brief, efficient provision of public

services is a crucial resource for business operation in a country. Since government is nearly the only supplier of this kind of resources, the power imbalance between the government and firms determines that bribery may be viewed as an attractive tool or strategy to speed up these regulatory processes and overcome resource constraints (Lee and Weng, 2013; Martin *et al.*, 2007). The rationale is that firms that bribe are more likely to build or secure advantageous positions in markets (Mishina *et al.*, 2010), while firms that do not bribe may be less advantaged facing market competition. I define regulatory efficiency as the speed of regulatory process in terms of starting up and closing off business, and providing other public services. I argue that heavy regulations of doing business will incentivize managers to "get things done" and get rid of asymmetric dependence through illegal bribery.

Hypothesis 1: *Regulatory efficiency of a nation has a negative effect on managers' motivation to bribe.*

Political rights as a moderator (two-way interaction)

Political rights manifest one aspect of political democracy of a nation in terms of creating a channel for firms or individuals to restrict governmental power and mitigate asymmetric dependence through multivariate political means such as lobbying and political contributions in the non-market arena (Hillman *et al.*, 2004; Shaffer, 1995). Pfeffer and Salancik (2003: 9) believe that a strong democratic arrangement provides individuals with "viable political power for expressing and realizing their desires for economic well-being". As theoretically proposed by Hillman and Hitt (1999) and empirically shown by Schuler *et al.* (2002), firms actively engage in a variety of political tactics to build access to public policies and deal with

environmental uncertainty regarding government, especially when they are dependent much on government regulations. Schuler (1996) also suggests that U.S. steel firms tend to influence the government trade policy to impede foreign competitors' access to the domestic market access through legal petition filing and congressional testimony, and Bonardi (2004) further points out that in many industries, using political strategies and seeking favorable regulatory outcomes, firms manage to deregulate for their expansion and upregulate to constrain rivals' competition. Moreover, these legal non-market strategies improve firms' performance both within domestic competition (Bonardi, Holburn, and Vanden Bergh, 2006) and facing foreigners' challenges (Marsh, 1998). However, there is an *implicit prerequisite*: the channel of altering the political environment or changing government regulations in the form of legitimacy does actually exist. In other words, non-market but legal strategies can only be realized in a nation equipped with high-quality political rights, while a lack of political rights amplifies the effect of regulatory inefficiency on managers' willingness of using illegal activities.

The moderating effect of democracy on the relationship between corruption and entry regulations has already been noticed by Djankov *et al.* (2002), but hasn't been articulated or exemplified in the logic of power. Hence, I argue that the political rights of a nation may moderate the influence of regulatory efficiency on managers' willingness to engage in illegal activities. Fortifying political rights will influence managers' potential choice confronting regulatory inefficiency, further reducing the attractiveness of bribery as a non-market strategy or as the only way to alter the asymmetric dependence on government when governmental

regulations are inefficient.

It is important to note that the above analysis makes clear the availability of non-market alternatives of altering dependence on government, but does not implies that there *must* be a substitute relationship between legal and illegal strategies. On the contrary, they may complement each other in some specific situations. Legal, non-market strategies are expensive, time-consuming and full of risk of failure or free-rider problems (Olson, 1965), but they can change the regulatory environment legitimately. On the other hand, illegal activities can overcome the shortage of lobbying or political contributions, and solve problems in a private, timely way while bearing the risk of exposure and accompanying punishment. Regardless of ethical critiques, their ultimate purposes may be the same, but managers' potential choices may be contingent on the nature of specific circumstances or issues (Getz, 1991). Mahon (1993) argues that several types of non-market behaviors may be acted simultaneously to achieve policy goals. Similarly, Hillman and Hitt (1999) indicate that an integration of a variety of political tactics is possible in order to pursue the same outcomes. Therefore, I cannot assert that the good quality of political rights will directly decrease managers' willingness to justify bribery. Lacking legal channels to deal with the problematic dependence on administration is a necessary but not sufficient condition for firms to use illicit ways to build access to resources provided by governments. What is certain, however, is that if the mechanisms of political rights of a nation are weak, managers' willingness to justify bribery will not decrease since the motivation to overcome regulatory inefficiency is still there and there are no legal alternatives they can choose.

Hypothesis 2: *Strong political rights of a nation strengthen the negative effect of regulatory efficiency on managers' willingness to justify bribery.*

Private sector as a moderator (three-way interaction)

The availability of resources may affect managers' choice between legal and illegal activities, and the resource slack is more important for implementing political non-market strategies than bribery since the former requires a large quantity of resources both from internal supports and external ties (Bourgeois III and Singh, 1983; Keim and Baysinger, 1988; Singh, 1986). Consecutive empirical papers have proven that hypothesis. Lenway and Rehbein (1991) indicate that firms with higher return on assets are more likely to engage into corporate political strategy. Meznar and Nigh (1995) and Schuler *et al.* (2002) further point out that there is a positive relationship between size of companies and engagement of political activities. Just as Pfeffer and Salancik (2003: 267) say, "only a few have enough resources and scale to attempt to alter their contexts in a significant fashion". Thus, the moderating effect of political rights presenting the possibility to manipulate the environment through legal non-market strategies might be less functional for managers who cannot have access to a large quantity of resources.

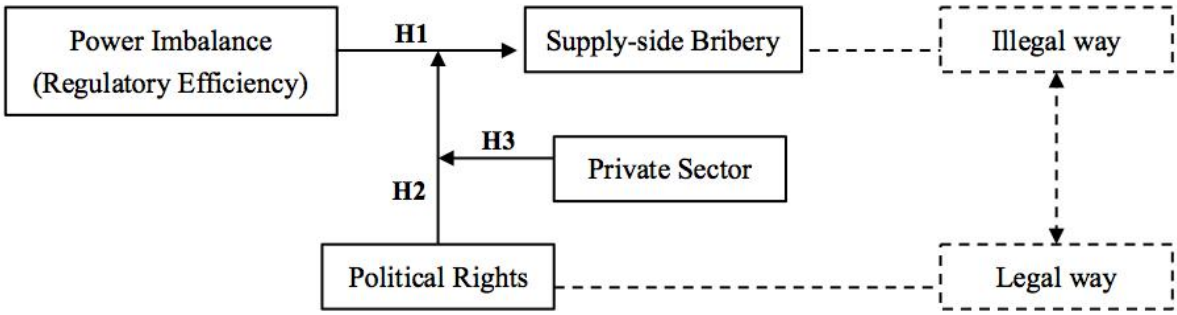
In addition to the size or financial position of a firm, the nature of ownership has recently been recognized as an important silent factor of decision-making (Okhmatovskiy, 2010; Zhou, Gao, and Zhao, 2017). Accordingly, I suspect managers working in the private sector will be less influenced by the moderating effect of political rights, since privately-owned enterprises (POEs) pursue effective use of resources, and hence have less resource slack than state-owned

enterprises (SOEs) (Stan *et al.*, 2014). SOEs are located predominantly in some emerging economies such as China and Russia, and they control many crucial resources in specific industries such as energy, transport and utilities. Such SOEs also exist in developed countries as the wish of governments (Goldeng, Grünfeld, and Benito, 2008). These giant entities have access to resources ranging from low-interest-rate loans (Song, Storesletten, and Zilibotti, 2011) to political ties (Okhmatovskiy, 2010). Conversely, POEs, especially those small and medium ones, are in the inferior position in terms of financial resources (Beck, Demirguc-Kunt, and Maksimovic, 2005) and innovation investment (Zhou *et al.*, 2017). Even in a nation with strong political rights, costly political strategies do not seem to be an affordable choice for most managers working for POEs. Therefore, I propose that compared to managers servicing in the public sector such as SOEs, managers who work in the private sector are less likely to use political means empowered by political rights of a nation to overcome the resource constraints imposed by governmental power.

Hypothesis 3: *Working in the private sector mitigates the moderating effect of political rights on the relationship between regulatory efficiency and managers' willingness to justify bribery.*

Figure 2.1

Theoretical Framework



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2.3 Method

2.3.1 Assumption

Given the issue I focus on and the data I have collected, I am unable to identify the levels of managers and industries where these managers operate. Hence, to be consistent with the perspective of cross-national analysis, I assume that managers in a nation have a relatively homogenous attitude towards unethical or even illegal activities under similar external pressures (Jones, 1995). Thus, I employ organizational-level resource dependence theory to develop hypotheses using both the country-level and individual-level constructs. This is consistent with the existing analytical methods (Cullen, Parboteeah, and Hoegl, 2004; McEvily, Sutcliffe, and Marcus, 1994), and this methodological approach is also my response to the call for multilevel dependence research (Hillman, Withers, and Collins, 2009). In addition, I agree that the justification of whether a manager is in a position of power is superfluous (Szwajkowski, 1985). The definition here would not distinguish between top managers and other levels of managers, because compared to employees the title of manager has already been empowered by the right to supervise others and can reflect the attitude to

alter the environment in a discretionary, managerial way (Coleman, 1987; Szwajkowski, 1985).

2.3.2 Sample

The World Values Survey (WVS) has conducted regular surveys about individuals' values across almost 100 countries using a common questionnaire since 1981. Due to national representativeness and consistent technical standards widely acknowledged by social scientists, data from these surveys have been used in prior academic research (Bénabou, Ticchi, and Vindigni, 2015; Cullen *et al.*, 2004). The sample for current study stems from the newest wave 6 covering 55 countries with 18,223 managers between 2010 and 2014. The survey by its nature is a cross-sectional dataset. Compared to other data sources in the research field of bribery or corruption, this survey data set has a few advantages for statistical and theoretical soundness.

First, compared to other indices based on the respondents' actual experience about corruption and bribery, such as the World Business Environment Survey (WBES) from the World Bank, data from the WVS mitigates the statistical bias caused by nonresponse and false response to some extent. The WVS reports 2 items for nonresponse: no answer and don't know answer. The two items together consist of 0.85% only of the total number of respondents (157 out of 18,380), far less than other experience-based surveys. In regard to the problem of false response, the question of bribery from WVS is embedded in a battery of non-political-sensitive questions ranging from "will you justify avoiding a fare on public transport" to "will you justify parents beating children", mitigating the problem associated

with the self-defensive mechanism (Jensen, Li, and Rahman, 2010). The question about justification of bribery is straightforward, intuitional, and does not need to recall any specific experience or knowledge, avoiding the problems such as "inaccurate or selective memory, fear of reprisals by authorities (Treisman, 2007)" and thus making the answer more reliable (Carmines and Stimson, 1980). Meanwhile, the question about attitude rather than actual engagement of bribery may not damage the personal reputation, making it more likely to reflect the genuine beliefs (Azfar and Murrell, 2009). Theoretically, consistent with my research question focused on the supply part of bribery, I argue that the bribery-related index only from managers without the confounding factors from the demand part, i.e., government officials, is more reasonable. Hence, the measurement from "to what extent are you willing to justify someone accepting a bribe in the course of their duties" can more precisely describe the target than the question such as "what percentage of total annual sales pay in informal payments or gifts to public officials", because the actual "price" of bribe has already been "negotiated" by both parties.

Second, compared to other country-level perception indices, such as the Corruption Perceptions Index (CPI) from the Transparency International (TI), the data from the individual level can give us more space to construct and test hypotheses from a multilevel perspective, overcoming the shortage of aggregate nature of country-level data (Svensson, 1999). In addition, the comprehensive index covers too many questions and themes, and makes "skeptics wonder what exactly the average is measuring, and suggest that selecting specific components to match the particular problem at hand makes more sense that using an

index (Treisman, 2007: 215)". Moreover, Razafindrakoto and Roubaud (2010) prove that, in terms of a topic about corruption or bribery, there is no significant correlation between what experts, specialists or scholars estimated and what households or the public actually believed or experienced across eight African countries. Absorbing opinions from western experts, country-level perception indices may not be instrumental for this study. The WVS data overcomes this shortage.

To test my hypotheses, I merge the datasets with the business freedom index from the Heritage Foundation; associational and organizational rights index from the Freedom House; and other country level indices, such as GDP growth, export and foreign direct investment inflows from World Development Indicators from the World Bank. The final sample consists of 18,223 managers across 55 economies for 4 years. Table 2.1 presents a brief summary of the sample distribution by economies including 13 developed economies, 5 emerging economies, and rest of them are developing economies spreading over America, Europe, Asia, Africa and Oceania.

2.3.3 Variables

Dependent variable To measure managers' willingness to see bribery as a strategy, I draw a specific question reported in the WVS about managers' justification of bribery in terms of someone's duties. The variable is measured on a ten-point Likert-type scale from response 1 "never justifiable" to 10 "always justifiable".

Table 2.1

Sample Distribution

Country/Area	Freq.	Percent	Country/Area	Freq.	Percent	Country/Area	Freq.	Percent	Country/Area	Freq.	Percent
Algeria	163	0.89	Germany	489	2.68	New Zealand	404	2.22	Sweden	366	2.01
Azerbaijan	180	0.99	Ghana	357	1.96	Nigeria	379	2.08	Thailand	371	2.04
Argentina	175	0.96	Hong Kong	391	2.15	Pakistan	250	1.37	Trinidad and Tobago	350	1.92
Australia	591	3.24	India	449	2.46	Peru	210	1.15	Tunisia	125	0.69
Bahrain	295	1.62	Japan	798	4.38	Philippines	273	1.50	Turkey	342	1.88
Armenia	259	1.42	Kazakhstan	236	1.30	Poland	154	0.85	Ukraine	294	1.61
Brazil	340	1.87	Jordan	249	1.37	Qatar	456	2.50	Egypt	174	0.95
Belarus	344	1.89	South Korea	270	1.48	Romania	323	1.77	United States	687	3.77
Chile	183	1.00	Kuwait	307	1.68	Russia	326	1.79	Uruguay	202	1.11
China	251	1.38	Kyrgyzstan	291	1.60	Rwanda	459	2.52	Yemen	89	0.49
Colombia	452	2.48	Lebanon	235	1.29	Singapore	683	3.75	Total	18,223	100
Cyprus	232	1.27	Malaysia	515	2.83	Slovenia	362	1.99			
Ecuador	101	0.55	Mexico	394	2.16	South Africa	298	1.64			
Estonia	638	3.50	Morocco	76	0.42	Zimbabwe	316	1.73			
Georgia	205	1.12	Netherlands	643	3.53	Spain	221	1.21			

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Independent variables

With a different perspective from previous studies (Yi *et al.*, 2018), I argue that business freedom derived from the Heritage Foundation is a proper index to measure regulatory efficiency rather than institutional arrangement. According to the methodology published on the Foundation's official website, the quantitative score stems from an array of factors that affect regulation efficiency based on 13 sub-factors in terms of starting a business, obtaining a license, closing a business and getting electricity. None of them refers to counter-corruption laws, enforceability of laws against bribery or any other ways which are seen as the root of explanation ability of neo-institutional theory (Cuervo-Cazurra, 2016). Since the measurement is about how many procedures and how much time and cost spent on the regulatory process, it can be better seen as the opportunity cost of doing business in a nation. In other words, it reflects the administrative efficiency of a government. The score of business freedom is from 0 to 100, and a higher score indicates a more effective business environment. In terms of robustness checks, I use cost, time and procedure of starting up a business to substitute for the aggregate index of regulatory efficiency and reveal more details about this relationship.

Moderators

Political Rights. The Freedom House publishes a series of indices yearly to indicate the democratic situation of a country in many aspects from political rights to civil liberties. I choose one sub-category index named "associational and organizational rights" as a proxy index. It consists of 3 aspects: (1) is there freedom of assembly, demonstration, and open

public discussion; (2) is there freedom for nongovernmental organizations, including interest groups, foundations, etc.; (3) is there effective collective bargaining; are there free professional and other private organizations without government interference. The score of this index is from 0 to 12, with a higher score indicating a stronger power of organizations confronting to government.

Sector. This variable is coded as 1 if managers work in a private, profitable business or industry. Working in any organization controlled or influenced by government such as a public institution or state-ownership enterprise (SOE) is categorized as 0.

Control variables

Benchmark: competitive motivation. Previous research has proven that competitive motivation is an important variable positively related to an individual's attitude to bribery (McKendall and Wagner III, 1999) or a firm's incidence of illegal actions (Mishina *et al.*, 2010). Therefore, I control for the variable of competitive motivation reflected by a manager's achievement and materialism orientation. The first item is "being very successful is important to this person; to have people recognize one's achievement". The second is "it is important to this person to be rich; to have a lot of money and expensive things". The scale is from 1: very much like me to 6: not at all like me. Scores are recoded so that a higher score means higher competitive motivation.

Other control variables. As the hypotheses are from individual and national characters, I control for a comprehensive series of variables from both individual-level and country-level. I include demographic information of a manager such as age (continuous variable above 18

years old), gender (category variable 0 for male and 1 for female), marital status (binary variable 1 for married or living together, and 0 for single, divorced, or widowed) and educational level (The answer ranges from 1: "no formal education" to 9: "University-level education, with degree") from the WVS. At the country-level, GDP growth (annual growth rate), export and foreign investment inflows (measured as the percentage of to GDP) are also controlled for. I also partial-out the effect of time by controlling for the dummy variable of years.

2.4 Analysis and Results

2.4.1 Results

Table 2.2 shows the means, standard deviations, and correlation matrix for all variables. According to the sample distribution, the average age of managers is about 45 years old, most of managers are men, married, and with some proper education. The variance inflation factor (VIF) is calculated from 1.03 to 1.80, which is far below the criteria value of 10, confirming that multicollinearity is not a major concern in my analysis.

Since about 70% of managers choose "never justifiable about bribery", the dependent variable is left censored at 1. Hence, I argue that an estimation of a Tobit model rather than OLS is more appropriate, and this approach is consistent with previous research (Breen *et al.*, 2017; Wiersema and Bowen, 2009). The year effects of all the models are fixed by the respective year dummy variables.

Table 2.2

Descriptive Statistics and Correlation Matrix

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	Variables	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11
1	Bribery	1.88	1.83											
2	Regulatory efficiency	74.37	16.20	-0.16*										
3	Political rights	8.02	3.64	-0.08*	0.23*									
4	Sector	0.64	0.48	0.02*	0.05*	0.14*								
5	Age	45.18	15.70	-0.13*	0.18*	0.24*	-0.14*							
6	Gender	0.62	0.49	0.03*	-0.05*	-0.01	0.07*	0.04*						
7	Marital	0.71	0.46	-0.02*	0.01	0.001	-0.02*	0.15*	0.10*					
8	Education	6.51	2.25	-0.05*	0.17*	0.002	-0.16*	-0.08*	-0.07*	-0.01				
9	Competitive motivation	3.64	1.22	0.11*	-0.26*	-0.30*	-0.02*	-0.26*	0.08*	-0.01	-0.04*			
10	GDP	4.29	3.72	0.06*	-0.22*	-0.42*	-0.08*	-0.19*	-0.03*	-0.00	0.00	0.22*		
11	Export	51.27	44.99	0.02*	0.35*	-0.15*	-0.03*	-0.01	-0.06*	-0.01	0.02*	0.01	-0.05*	
12	FDI inflow	4.71	8.81	0.00	0.19*	-0.07*	-0.02*	0.04*	-0.04*	-0.02*	0.00	-0.08*	-0.06*	0.57*

N=18,223. * shows significance at the 0.05 level.

Table 2.3

The Results from Tobit Regression

Variables	Model 1	Model 2	Model 3
H1: Regulatory efficiency	-0.035***	-0.000	0.010
	(0.003)	(0.007)	(0.011)
H2: Regulatory efficiency × Political rights		-0.004***	-0.006***
		(0.001)	(0.001)
H3: Regulatory efficiency × Political rights × Sector			0.003*
			(0.002)
Political rights	-0.043***	0.270***	0.438***
	(0.013)	(0.059)	(0.098)
Sector	0.376***	0.346***	1.654*
	(0.091)	(0.091)	(0.966)
Regulatory efficiency× Sector			-0.015
			(0.013)
Political rights × Sector			-0.257**
			(0.119)
Age	-0.040***	-0.038***	-0.038***
	(0.003)	(0.003)	(0.003)
Gender	0.307***	0.321***	0.323***
	(0.085)	(0.085)	(0.086)
Marital	-0.023	-0.015	-0.008
	(0.091)	(0.091)	(0.091)
Education	-0.068***	-0.054***	-0.053***
	(0.019)	(0.019)	(0.019)
Compete motivation	0.187***	0.185***	0.184***
	(0.038)	(0.038)	(0.038)
GDP	0.070***	0.064***	0.066***
	(0.015)	(0.014)	(0.014)
Export	0.008***	0.007***	0.007***
	(0.001)	(0.001)	(0.001)
FDI	-0.007	-0.008	-0.008
	(0.006)	(0.006)	(0.006)
Constant	2.311***	-0.340	-1.157
	(0.365)	(0.602)	(0.860)
Observations	18,223	18,223	18,223
Pseudo R-squared	0.0239	0.0246	0.0248

*** p<0.01, ** p<0.05, * p<0.1

Robust standard errors in parentheses. Year fixed effects are included and not shown.

表格 0.3

Hypothesis 1 predicts that high regulatory efficiency will be negatively related to managers' willingness to justify bribery. Consistent with this assertion, the coefficient of regulatory efficiency is negative (β=-0.035, p=0.000) in Model 2, so that hypothesis 1 is supported. In terms of the marginal effect, when the regulatory efficiency increases by 1 unit, the percentage decrease in the probability of justifying bribery is 1.06 percent.

Hypothesis 2 predicts that the negative relationship between regulatory efficiency and managers' willingness to justify bribery will be stronger in a nation with higher political rights. This hypothesis is supported by the result in Model 3 since the coefficient of the interaction item between regulatory efficiency and political rights is negative (β=-0.004, p=0.000). In terms of economic magnitude, when political rights takes its mean minus one standard deviation and the regulatory efficiency increases by 1 unit, the probability of justifying bribery will decrease by 0.56 percent. However, when political rights takes its mean plus one standard deviation and the regulatory efficiency increases by 1 unit, the probability of justifying bribery will decrease by 1.41 percent.

It is argued that the interaction effect of nonlinear models may not be truly reflected by the coefficients (Ai and Norton, 2003; Wiersema and Bowen, 2009). Following previous studies, I plot the predicted probability that managers justify bribery against the regulatory efficiency at low political rights (solid line; the mean minus one standard deviation) and high political rights (dash line; the mean plus one standard deviation) to better demonstrate the interaction effect of regulatory efficiency and political rights (Figure 2.2). Figure 2.2 shows that, as regulatory efficiency of a nation increases, the likelihood of managers' justification of bribery

decreases, and it decreases faster for countries with strong political rights than for those with weak political rights. In other words, political rights will strengthen the negative effect of regulatory efficiency on managers' justification of bribery.

Figure 2.2

Interaction of Regulatory Efficiency and Political Rights (two-way)

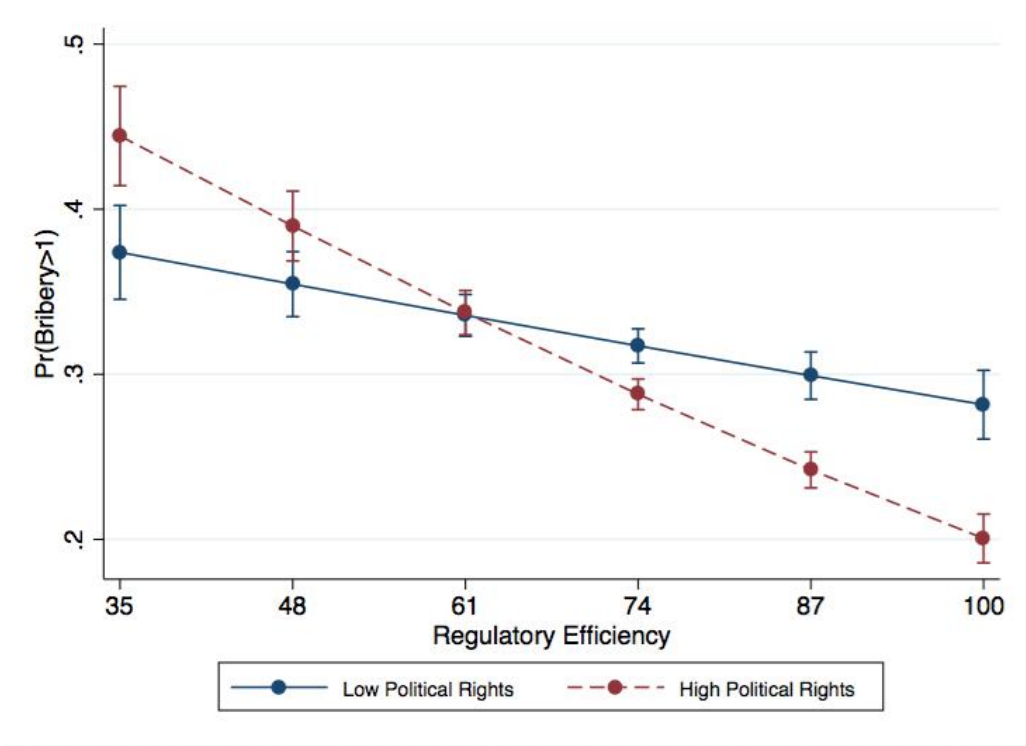

图 0- 2

Hypothesis 3 predicts that the moderating effect of political rights on the relationship between regulatory efficiency and managers' attitude to bribery would be weak when managers work in the private sector. As Table 2.2 presents, the three-way interaction of regulatory efficiency with political rights and the private sector in Model 3 has a positive effect (β=0.003, p=0.052). Since the p-value is slightly larger than 0.05, the interpretation of hypothesis 3 should be cautious. In terms of marginal effects, for the private sector, when political rights takes its mean minus one standard deviation and the regulatory efficiency increases by 1 unit, the

percentage decrease in the probability of justifying bribery is 0.62 percent; when political rights takes its mean plus one standard deviation and the regulatory efficiency increases by 1 unit, the percentage decrease in the probability of justifying bribery is 1.25 percent. However, for the public sector, when political rights takes its mean minus one standard deviation and the regulatory efficiency increases by 1 unit, the percentage decrease in the probability of justifying bribery is 0.48 percent; when political rights takes its mean plus one standard deviation and the regulatory efficiency increases by 1 unit, the percentage decrease in the probability of justifying bribery is 1.72 percent.

Figure 2.3

Interaction of Regulatory Efficiency, Political Rights and Sector (three-way)

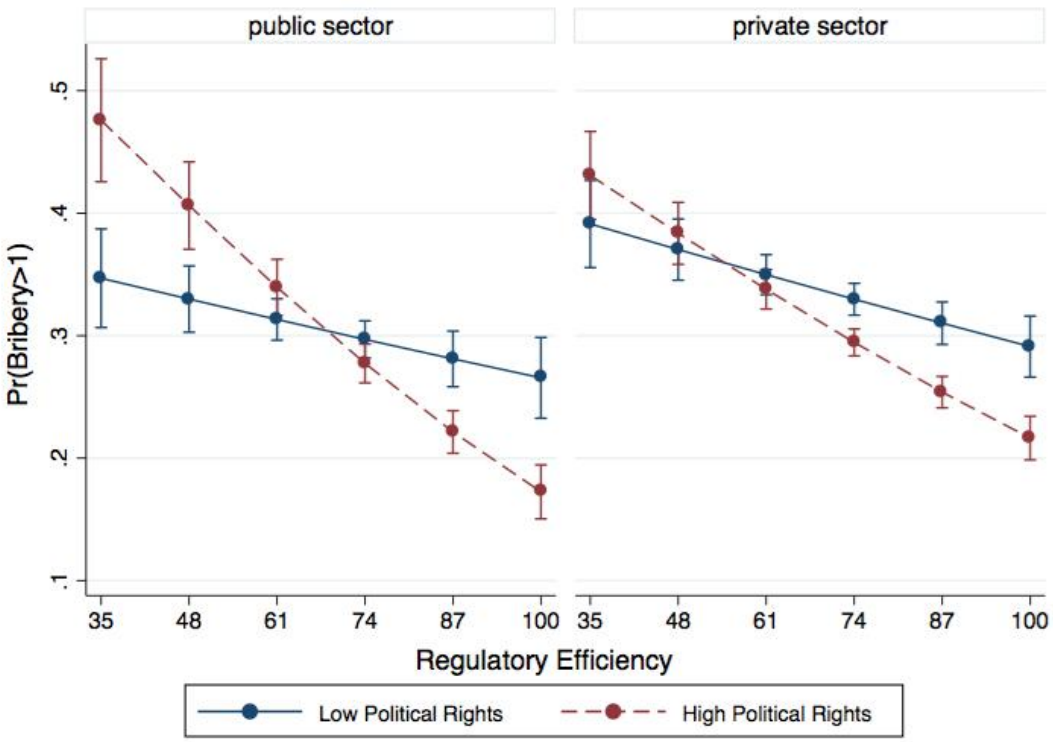

图 0- 3

I further plot the three-way interaction effects in Figure 2.3, which displays the effect of regulatory efficiency on managers' willingness to justify bribery at different levels of political rights for the public and private sector respectively. It shows that the effect of political rights will enhance the negative relationship between regulatory efficiency and managers' attitude to bribery for both private and public sectors, but that effect will be slightly weaker for managers who work in the private sector. The result is consistent with my prediction.

With regard to the control variables, managers' age indicates that an older manager is less likely to engage in bribery. Compared to male managers, female managers are less likely to justify bribery. This result may reveal the risk aversion of female and is consistent with previous studies (Breen *et al.*, 2017; Swamy *et al.*, 2001). Managers' educational level negatively and competitive motivation positively affect managers' justification of bribery. Meanwhile, GDP growth and export are positively related to managers' willingness to justify bribery.

2.4.2 Robustness Check and Additional Analyses

2.4.2.1 Multilevel analysis and different independent variables

Since some country-level variables are included in my modeling and data is nested within countries, I think the multilevel model should be applied as a robustness check. In addition, there might be a concern about the measurement of regulatory efficiency as it is an aggregate index that might cause conceptual confusion. To remedy the above problems, I collect data about the cost, time and procedure of starting up a business in a nation to reveal more details about the relationship between regulatory efficiency and managers' willingness to justify

bribery. Multilevel analysis would help us to see if there are important country differences in managers' values and attitudes towards bribery in terms of regulatory efficiency.

The results in Table 2.4 demonstrate that hypothesis 1 is supported. First, there are country differences in managers' attitudes towards bribery in terms of regulatory efficiency since the coefficient is negative (β=-0.012, p=0.050). For economic magnitude, when the regulatory efficiency increases by 1 unit, the probability of justifying bribery decreases by 1.20 percent. This marginal effect is very close to the result from the tobit regression in Table 2.3 (1.06 percent).

Second, as the sub-indices of regulatory efficiency, I think the time and procedure of starting up a business are more representative of regulation efficiency. Hence, it should influence managers' attitude to bribery more than the cost of staring up a business.

As the result, the cost of starting up a business is not significant (Model 2 in Table 2.4), while the time and procedures of starting up business are significant (Model 3 and 4 in Table 2.4). In terms of economic magnitude, when the time of staring up a business increases by 1 day, the probability of justifying bribery increases by 1.10 percent; when the procedure of staring up a business increases by 1, the probability of justifying bribery increases dramatically by up to 6.80 percent. The evidence strongly supports the main hypothesis that regulatory efficiency is negatively related to the managers' willingness to justify bribery.

Table 2.4

The Results of Different Independent Variables

Variables	Model 1	Model 2	Model 3	Model 4
Independent variables: Regulatory Efficiency				
Startup cost	0.009***			-0.000
	(0.002)			(0.003)
Startup time		0.026***		0.017***
		(0.002)		(0.004)
Startup procedure			0.179***	0.129***
			(0.018)	(0.021)
Controls				
Political rights	-0.050***	-0.049***	-0.049***	-0.047***
	(0.014)	(0.013)	(0.013)	(0.013)
Sector	0.321***	0.314***	0.365***	0.339***
	(0.092)	(0.091)	(0.091)	(0.091)
Age	-0.042***	-0.041***	-0.041***	-0.040***
	(0.003)	(0.003)	(0.003)	(0.003)
Gender	0.322***	0.335***	0.291***	0.305***
	(0.086)	(0.085)	(0.086)	(0.085)
Marital	-0.010	-0.005	-0.034	-0.023
	(0.091)	(0.091)	(0.091)	(0.090)
Education	-0.087***	-0.090***	-0.075***	-0.077***
	(0.019)	(0.019)	(0.019)	(0.019)
Competitive motivation	0.218***	0.219***	0.214***	0.211***
	(0.038)	(0.038)	(0.038)	(0.038)
GDP	0.104***	0.112***	0.094***	0.097***
	(0.015)	(0.015)	(0.014)	(0.015)
Export	0.004***	0.006***	0.008***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
FDI	-0.003	-0.003	0.004	0.002
	(0.006)	(0.006)	(0.006)	(0.006)
Constant	0.291	-0.558	-1.620***	-1.693***
	(0.328)	(0.341)	(0.381)	(0.383)
Observations	18,223	18,223	18,223	18,223
Pseudo R-squared	0.0216	0.0236	0.0238	0.0247

*** p<0.01, ** p<0.05, * p<0.1

Robust standard errors in parentheses. Year fixed effects are included and not shown.

表格 0.4

2.4.2.2 Testing for endogeneity: instrumental variable

As the empirical results come from survey data, possible endogeneity problems should be tested to reinforce our confidence in the reliability and validity of the results. An endogeneity problem arises when some factors that are related to the dependent variable (y) are also related to the independent variable (x), but those factors are not controlled in the existing model (Reference?). Therefore, the most common source of endogeneity is omitted variables, while other sources of endogeneity such as simultaneity (reverse causality), measurement error and self-selections are also important. In this paper, the most likely source of endogeneity is omitted variables as the level of key variables (x and y) are at different levels (individual and country level), while the variables I can control for in the model are limited.

To address endogenous concerns in the research as raised by Bascle (2008); Hamilton and Nickerson (2003), I use two-stage least squares (2SLS) to test whether the main variable has any endogenous problem and circumvent bias with instrumental variables. This 2SLS approach is advocated by Semadeni, Withers, and Trevis Certo (2014), and it is especially effective when there are multi-sources of endogeneity (Certo *et al.*, 2016). To implement this approach, I use urban population (% of total population) and Internet users (per 100 persons) of a nation as the instrumental variables. I expect the concentration of population needs an improvement of regulatory efficiency, and the use of the Internet offers technological possibilities for higher regulation efficiency. At the same time, it is not clear whether the two factors would impact the likelihood of managers' justification about bribery.

Table 2.5 reports the first- and second-stage of 2SLS and the comparison with the original

OLS test. Both instruments are significantly positive (Urban population: β=0.115, p=0.000; Internet users: β=0.241, p=0.000) in the first stage. The partial R-square is 0.1914 and the partial F-statistic is highly significant (p<0.001), indicating that the instruments are not weak (Stock, Wright, and Yogo, 2002). Further, more than one instrument is normally needed to test the over-identity restriction to identify the exogenous assumption of instruments (Larcker and Rusticus, 2010; Semadeni *et al.*, 2014). Since the Sargan and Basmann tests failed to reject the null hypothesis that the instruments are uncorrelated with the disturbance term in the second-stage model (p=0.2366; p=0.2368), I can be confident about the results from this 2SLS model.

Table 2.5

Two-stage Least Squares Estimation

	2SLS		OLS
	First-stage	Second-stage	
Variables	Regulatory efficiency	Bribery	Bribery
Regulatory efficiency		-0.027***	-0.014***
		(0.002)	(0.001)
Instruments			
Urban population	0.115***		
	(0.006)		
Internet access	0.241***		
	(0.007)		
Controls			
Political rights	0.016	0.016***	0.010**
	(0.030)	(0.005)	(0.004)
Sector	1.121***	0.080***	0.066**
	(0.185)	(0.029)	(0.029)
Age	0.033***	-0.008***	-0.009***
	(0.006)	(0.001)	(0.001)
Gender	-0.616***	0.090***	0.098***
	(0.177)	(0.028)	(0.028)
Marital	0.294	-0.027	-0.026
	(0.188)	(0.030)	(0.030)

Education	0.416***	-0.002	-0.013**
	(0.040)	(0.007)	(0.006)
Competitive motivation	-0.802***	0.032**	0.049***
	(0.077)	(0.013)	(0.012)
GDP	-0.512***	0.014**	0.027***
	(0.032)	(0.005)	(0.005)
Export	0.068***	0.005***	0.003***
	(0.003)	(0.000)	(0.000)
FDI	-0.104***	-0.005**	-0.004*
	(0.012)	(0.002)	(0.002)
Constant	53.50***	3.505***	3.068***
	(0.875)	(0.225)	(0.117)
Observations	18,223	18,223	18,223
Diagnostics for Instrumental Variables			
Partial R-squared	0.191		
Partial F-statistic	2154.97 (p = 0.000)		
Over-identifying restriction	Sargan 1.400 (p = 0.237)	Basmann 1.399 (p = 0.237)	
Endogenous test	Durbin 33.161 (p = 0.000)	Wu-Hausman 33.191 (p = 0.000)	

*** p<0.01, ** p<0.05, * p<0.1

Standard errors in parentheses. Year fixed effects are included and not shown.

表格 0.5

The second column of Table 2.5 shows the result for the second-stage estimation, where the coefficient on regulatory efficiency (key independent variable in this study) is negative (β=-0.027, p=0.000), providing strong support for hypothesis 1. The Durbin-Wu-Hausman test rejects the null hypothesis of exogeneity, so that the result from 2SLS is more valid than OLS. Comparing the results from 2SLS and OLS (the last column), I find out that the true magnitude of regulatory efficiency should be about twice larger than the OLS result. Hence, this finding provides additional and strong evidence that the likelihood of managers' justification of bribery will increase while the regulatory efficiency decreases.

2.5 Discussion and Conclusion

In this study, I have applied insights from resource dependence theory to demonstrate that, in

spite of ethical critiques, managers may view bribery as an attractive strategy to acquire resources from the government (Lee and Weng, 2013; Martin *et al.*, 2007). I argue that the power imbalanced relationship between government and firms is the main reason why managers justify bribery since it can alter or create more favorable external environment for firms. This kind of power imbalanced relationship can be reflected in many aspects, such as government purchasing or industrial policies. In this research, I examine the aspect of public services supplier, and the result is consistent with previous literature. Further, democracy may mitigate this effect. I find empirical support for the notion that great political rights of a nation strengthen the negative effect of regulatory efficiency on managers' willingness to justify bribery, particularly for managers working in the public sector given the lack of resource slack in the private sector. These findings contribute to the extant literature in five ways.

2.5.1 Theoretical Contributions

First, I provide a more subtle perspective on how to understand bribery. Prior studies have focused largely on the demand side, seeing bribery as a passive way to adapt to the external environment, and criticizing officials' demanding and governments' corruption. In the empirical literature, most studies fail to distinguish between the demand and supply side of bribery, leading to inconclusive results. Following my observation of the reality and careful reading of the literature, I posit that managers will view bribery as a strategy to acquire resources and then seek unfair competitive advantages when they problematically depend on their governments. This focus allows me to take a more nuanced approach to examining the relationship between governmental intervention in markets and individuals' risk-seeking

behaviors.

Second, I contribute to the study of non-market strategies and expand it to an illegal context. Despite calling for an integrated consideration of both market and non-market strategies (Baron, 1995; Holburn and Vanden Bergh, 2014), existing research has not paid much attention to the connection between illegal and legal non-market strategies. My study tries to synthesize them into a single theoretical framework and suggests that, when there is an effective channel for legal non-market means, managers are less likely to see bribery as a potential strategic choice confronting regulatory inefficiency. Thus, my results offer an important implication for the discussion about the determinants of alternative choice of non-market strategies.

Third, I contribute to resource dependence theory in terms of new application. Resource dependence theory has been proven to be an instrumental theory to interpret themes both in the field of market strategy such as mergers and joint ventures (Casciaro and Piskorski, 2005) and non-market strategy especially for corporate political activities (Hillman and Hitt, 1999; Hillman *et al.*, 2004; Schuler *et al.*, 2002). However, the research of illegal strategy has not been specially analyzed. According to my theorizing, illegal activities can be viewed as a potential choice for managing external uncertainty. Bribery is a kind of tacit agreement to deal with asymmetric dependence on government and overcome resource constraints stemming from the power imbalance. In addition, resource dependence theory has been looking into interactions between firms and government by examining the governmental role as a *customer* (such as government purchasing) or a *market shaper* (such as a policy maker). However,

government as a *supplier* of public services is overlooked in the literature about the impact of government on firms' operations and managers' potential choice of illegal activities. My study manages to fill this gap and expand my understanding in a holistic view about governmental multi-roles.

Forth, this study challenges the dominant perspective of using institutional theory to understand bribery. In recent years, it has become fashionable for research about bribery to apply institutional theory following the logic of legitimacy (Cuervo-Cazurra, 2008; Zoogah, Peng, and Woldu, 2015). However, this prevalent wisdom has met two difficulties when institutions are used to explain bribery. First, it is difficult to point out *which* institution would be the most relevant (Xu and Meyer, 2013a). Second, although there is enthusiastic support to the argument that actors can shape institutions (Kostova and Zaheer, 1999; North, 1991; Oliver, 1997), there is still a lack of solid theory and statistical evidence about how managers' non-market strategy affects their business environment. In my study, these two difficulties are overcome explicitly via the new application of resource dependence theory.

Fifth, I add to the literature about the relationship between democracy and bribery or corruption. It is often believed that there may exist a negative relationship between democracy and corruption as the result of transparency and justice principles of the procedure, or strong supervision by public opinions (Treisman, 2007). However, there is a lack of theoretical discussion in a managerial logic. Through this study, I contribute to the topic by illustrating how democracy (reflected as the political rights in this study) provides a legal non-market channel for managers to alter the environment predetermined by the government and hence

mitigate their potential choice of bribery.

2.5.2 Practical Implications

My results also offer some practical implications for both regulators and managers. Conventional academic literature about bribery or corruption puts responsibility on the governmental accountability and tends to view clean government to be a solution for bribery, but ignores the importance of the functioning of efficient business environments. My findings suggest that reducing time and procedure of setting up or closing off business, and providing basic public services effectively are a feasible way to reduce corruption by mitigating managers' willingness to bribe. I believe it is especially crucial for the developing world. Besides, the results show that building the democratic channel to respond to firms' demand will mitigate the possibility of firms' bribery. Although the asymmetric power relations may not be reversed, providing more efficient administrative services and improving institutional quality can reduce the possibility to bribe since these efforts can alleviate resource constraints firms confront and decrease transaction costs firms operate with. Firms or individuals should have legitimate channels to express their views about public affairs and solve problems in the non-market or governmental arena. By doing so they may have less motivation to engage in illegal non-market activities.

Although the thesis proves that bribery can be used as an illegal non-market strategy to counterbalance their power disadvantage position, which does not imply that bribery is a justifiable way to acquire resources in a healthy society. Now that lobbying or other corporate political activities have a similar function of bribery but legally and acceptably, it may be

smart to invest in political activities at the early stage and cultivate political connections to deal with the inevitable challenge from the asymmetry dependence of the government.

2.5.3 Limitations and Future Research Directions

Although the resource dependence perspective provides a general explanation of managerial discretion about bribery by altering external dependence on government, my analysis is performed at the country and individual level, and has not shed lights at the firm or industry level. Future research might consider firm or industry heterogeneity. For example, asymmetric dependence on government can vary across industries. Also, asymmetric dependence might be more crucial for start-up businesses than incumbents (Baron *et al.*, 2018; Gurses and Ozcan, 2015).

Moreover, I posit that resource slack will influence managers' choice about legal political strategies or illegal bribery strategies. I use the ownership structure to prove that idea, but there might exist more suitable indexes to measure resource slack. Meanwhile, based on my findings, I conclude that SOEs have more resource than POEs, and that the moderating effect of political rights will be stronger for SOEs. However, some other possible means to overcome resource constraints haven't been considered in this study. For example, POEs could alter the relationship with government via forming business groups (Guillen, 2000), or building political ties with government officials to acquire scarce resources (Li, Poppo, and Zhou, 2008). I hope that further research could continue to explore various means of non-market strategies and their intriguing interactions.

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CHAPTER THREE

Innovative Strategy and Illegal Behavior in Emerging Economies

Abstract

Why might an innovative strategy trigger illegal behavior? This study proposes that firms will resort to problemistic search according to the anticipated negative feedback of a strategy rather than actual outcomes. Using data from the World Bank Enterprises Survey, I find that investing in R&D will lead to bribery in developing countries where unfavorable factors will diminish the expected returns, confirming that the discrepancy between the expectation of innovation and the estimation of its actual achievement is a source of illegal behavior. To extend the boundary of the behavior theory of the firm (BTOF), I borrow ideas from the general strain theory (GST), which identifies the other two mechanisms of illegal behavior of organizations: the discrepancy between aspirations and expectations; and the discrepancy between fair outcomes and unfair outcomes. The results support the hypotheses that aspirational strain and unfair strain intensify the positive relationship between R&D input and bribery. However, when a firm has the experience of R&D output, it will mitigate a firm's tendency to bribe since it has accumulated the relevant knowledge. My intended contribution is to extend the focus of research from behavior changes after the exact negative feedback to behavioral changes based on the anticipated negative feedback. Shedding lights on a sociological theory, I enrich the definition of negative feedback that not only drives from the discrepancy between expectation and actual outcomes, but also stems from the discrepancy between aspiration and expectation, fair outcomes and unfair outcomes.

3.1 Introduction

Firms take strategies for the purpose of improving performance or building competitive advantages, and then receive feedback on those strategies intertwined within the environment. This feedback shapes firms' reactions and future behaviors in a dynamic cycle (Eggers and Suh, 2019). Behavioral theory suggests that with bounded rationality, firms will be motivated to take problemistic search for solutions when performance feedback is below a particular aspiration level (Argote and Greve, 2007; Cyert and March, 1968; Simon, 2013). This theory has received increasing attention from empirical studies, especially those on firms' illegitimate or illegal behaviors as responses to negative feedback (Bromiley, 1991; Mishina *et al.*, 2010; Xu *et al.*, 2019).

Despite a wealth of fruitful investigations, the extant research has mostly focused on the change of behavior *after* exact negative feedback or a specific failure to achieve the prior expectation. However, in reality, behavioral changes are commonly initiated under chronic and underlying performance pressure *before* a sudden frustration or explicit recorded feedback (Cyert and March, 1968; Simon, 2013). Therefore, in this research, I emphasize that firms can change behaviors in accordance with a kind of potential, anticipated performance feedback triggered by a previous strategy and its interaction with the environment, instead of a specific, physical reference point compared with the historic performance. To prove this postulation, I investigate the situation where firms take the strategy of investing in R&D in emerging economies. I propose that firms will be more likely to use illegal bribery as a problemistic search because the anticipated feedback of the R&D strategy can be negative in the environment with "institutional voids" such as a lack of continuous capital support (Xu and Meyer, 2013b; Zheng *et al.*, 2013), inadequate legal and judicial systems (Peng *et al.*, 2017), and high uncertainty and volatility (Santangelo and Meyer, 2011). The situation molded by firms' strategy and the specific environmental factors leads to negative anticipated

feedback, and then firms are motivated to initiate risk-taking behavior to deal with the potential possibility of not meeting expectations before the actual result of their strategy realizes.

Moreover, to provide new insights into the relationship between *ex ante* strategy and *ex post* behavior, I draw on the lens of general strain theory (GST) from sociology to extend the boundary of the behavior theory of the firm (BTOF), and investigate how one strategy taken previously will influence the subsequent behavioral change under the different types of strains. The GST suggests that the negative effect from external relationships creates pressure, and may lead individuals to make use of illegitimate channels or illegal means to achieve their original goals (Cloward and Lloyd; Cohen, 1955; Merton, 1938). Specifically, when the external conditions prevent individuals from achieving positively valued goals, illegal means will be motivated by three kinds of strain: 1) the disjunction between aspirations and expectations; 2) the disjunction between expectations and actual achievements; and 3) the disjunction between fair outcomes and actual outcomes (Agnew, 1992, 2001). The extant literature on the relationship between negative feedback and illegal behavior falls into the sphere of the second category (Mishina *et al.*, 2010; Xu *et al.*, 2019). The other two categories of the strain, which may lead to illegal corporate behavior, have not been articulated in the theoretical mechanisms of the BTOF. I propose that the strain of aspiration and that of unfairness will amplify the positive relationship between R&D investment and bribery.

In addition to the theoretical gap above, the relationship between innovation and bribery presented in the literature is not consistent with what we observe in reality. Bribery or corruption is conventionally believed to play a negative role on innovation as this kind of illegal plunder increases transaction costs and discourages constructive investments (Mahagaonkar, 2008; Murphy, Shleifer, and Vishny, 1993; Starosta de Waldemar, 2011; Veracierto, 2008). On the other hand, previous literature demonstrates that the introduction of

new products or development of new product line in emerging economies will cause more bribes since innovative firms are vulnerable and easily become preys of corrupt governments (Ayyagari, Demirgüç-Kunt, and Maksimovic, 2014; Krammer, 2019; Murphy *et al.*, 1993). Integrating the two viewpoints, these studies imply that the relationship between corruption and innovation can be a vicious cycle, leading to a long-term, low-level innovativeness and competitiveness in emerging economies if corruption cannot be significantly curbed. In reality, however, some emerging economies have evolved into innovative dynamos rather than dinosaurs for the last decade or so without significant improvement of business environments. For instance, the ranking of innovation index of China in 2009 was 43, with 67 on innovation input and 31 on innovation output; while its ranking in 2019 was 14, with 26 on innovation input and 5 on innovation output (Global innovation index, 2009; 2019). In contrast, the ranking of corruption index of China dropped from 79 in 2009 to 87 in 2018 (International Transparency, 2009; 2018). Vietnam, Thailand, and some other emerging economies have been experiencing similar changes.

To resolve the inconsistency between the literature and reality, I theorize in this paper that the mechanisms of innovation input and output pertain to different facets of innovation impact on bribery. Accordingly, I argue that the mixed empirical evidence reported in the literature can be caused by the use of different innovation indices. For instance, Le (2017) finds that firms with a radical innovative change will be less likely to pay bribes, but incremental innovation such as enhancing current products associates with a high probability of bribery; and there is no evidence showing that process innovation will affect the motivation of informal payments. Substituting the innovation proxy variable "introducing a new product" for "upgrading an existing product", Krammer (2019) finds that the existing positive relationship between innovation and bribery disappears. Ayyagari *et al.* (2014) show that not all specific indices of innovation output have a significant association with bribery. A logical speculation is that the

nature and extent of the association of firms' innovation with illegal bribery vary with the nature of risk: innovation input is more likely to trigger problemistic search such as illegal bribery given the high uncertainty of this kind of investment; while the learning experience from innovation output, such as launching new products successfully, may alleviate the pressure of negative anticipated feedback from the innovation input, and then decrease the possibility of using risk-taking behavior as a response to the previous strategy.

Whereas prior studies emphasize on benefits of initiating innovation, especially for its most advanced form – R&D activities, this study draws attention to the burden of doing R&D in emerging economies, and its detrimental effect on organizational actions. My study contributes to the literature in the following ways. First, I propose that the feedback on R&D investment can be anticipated once a firm takes a strategy in a specific environment, and the action can be changed immediately, instead of using the *ex post* feedback such as a specific reference point or accounting records. I believe this proposition is closer to the reality and hence the BTOF can be generalized. Second, I extend the mechanism boundary in terms of the trigger of organizational behavioral changes. Enlightening from the GST in sociology, I propose that the discrepancy between aspirations and expectations, and that between fair and unfair outcomes will produce a similar behavioral response as caused by the discrepancy between expectations and actual achievements delineated in the BTOF. I demonstrate that the other two categories of discrepancy will amply the relationship between R&D input and bribery. Third, I distinguish the mechanism of innovation input from innovation output on bribery, and prove that the accumulated learning experience (R&D output) can reduce the possibility of engaging in bribery for innovative firms. All the above helps us to tease out the actual relationship between innovation and bribery, and solve the puzzle of inconsistency between the literature and practice.

3.2 Theory and Hypotheses

3.2.1 The Cycle of Previous Strategies, Negative Feedback and Behavioral Changes

Negative feedback may trigger dichotomic risk-taking reactions. The positive actions include innovation (Chen and Miller, 2007; Eggers and Kaul, 2018; Greve, 2003; Joseph and Gaba, 2015; O'Brien and David, 2014), acquisition and expansion (Audia and Greve, 2006; Cho *et al.*, 2016; Iyer and Miller, 2008; Kim, Finkelstein, and Haleblian, 2015; Ref and Shapira, 2017), and organizational changes (Kacperczyk, Beckman, and Moliterno, 2015), whereas negative ones mainly refer to using illegal behaviors as problemistic search (Harris and Bromiley, 2007; Mishina *et al.*, 2010; Xu *et al.*, 2019). Recently, scholars have noticed that the inconsistent directions of organizational changes towards negative feedback are imputable to the ignorance of resource constraint. The scenario of falling seems unable to sustain positive activities, which are resource-consuming rather than resource-slack (Kuusela, Keil, and Maula, 2017). Therefore, the positive direction of actions may be less likely to be undertaken in response to the negative feedback since the resource that firms can operate declines due to performance shortfalls; while negative feedback is more likely to be a trigger of negative actions, such as bribery, to solve problems myopically (Xu *et al.*, 2019).

Consistent with the BTOF, another stream of literature explores behavioral changes caused by the negative feedback drawing from a specific strategy, and argues that organizations are adaptive systems which can update their behaviors according to the feedback on the prior actions (Cyert and March, 1968; Simon, 2013). For instance, using a dataset of medical devices, Maslach (2016) finds that when novel innovations fail, future innovative activities will be suppressed. Eggers and Suh (2019) prove that the failure on new product development may trigger three different types of behavioral responses: retreat, local search and distant search upon the different conditions. Simply put, “some decisions are irrevocable in the sense that they create a new situation which, in turn, influences the decision that follow them"

(Simon, 1947: 76). In other words, when the goal setting by a specific strategy is not achieved, the firm will have an incentive to divert to a negative, myopic action to solve the problem accordingly. In all, the cycle of previous strategy, feedback and behavioral changes appears in order. In addition, if the feedback stemming from previous strategy is negative, the subsequent behavior is more likely to be negative such as illegal bribery.

In this decision-making process, I argue that firms may take actions immediately when they *anticipate* that the outcome of a specific strategy may not meet expectations in reality, rather than only respond after negative feedback emerges, such as an explicit failure presented in accounting reports. March and Simon (1958: 13) delineate this phenomenon clearly: "much of the behavior I observe in organizations is 'intuitive' in the sense that it occurs immediately upon recognition of a situation", and " (situations) without any apparent interval of search, problem-solving, or choice are not rare."(March and Simon, 1958: 163) The citations have two implications. First, firms can recognize situations and anticipate outcomes, and then take actions before the explicit appearance of failure defined by the actual performance below aspirations. Second, the recognition and anticipation are often based on imperfect information and limited alternatives. Therefore, the problemistic search triggered instantly is an outcome of bounded rationality rather than an optimal result (Cyert and March, 1968). As long as the desire to avoid the consequences of loss has been strengthened, subsequent behavioral changes will be undertaken in order to reduce uncertainty drawing from the previous strategy (Kahneman and Tversky, 1979), regardless of whether the accurate evaluation about consequences has been done. Therefore, in practice, I may only observe previous strategies and subsequent behavioral changes, while the mechanism of anticipated feedback is subsistent but unobservable.

3.2.2 How to Anticipate the Feedback of a Strategy? The Role of Environment

The original BTOF suggests that decision-makers' anticipations, expectations and evaluations

which are conventionally seen as the factors influencing behavioral changes are largely determined by the environment and how firms interpret it (Cyert and March, 1968). In other words, the external environment cannot be simply seen as an exogenous variable, but it is embedded in the decision-making process. As March and Simon (1958: 160) present, "the organizational and social environment in which the decision maker finds himself determines what consequences he will anticipate, what ones he will not; what alternatives he will consider, what ones he will ignore." This argument emphasizes the importance of environments in anticipating feedback as elements in an environment may facilitate or impede the achievement of a specific strategy. Following the environment evaluation, a firm will estimate whether achievements will be above or below the original goals setting by strategies. If the anticipation of achievements is not satisfactory, the problemistic search may be taken in response to the negative anticipated feedback.

Moreover, the direction of anticipated feedback is associated with not only the environment statically, but more importantly the interaction between the strategy and the environment. "The elements of the definition of the situation are not 'given'… (the situations) are themselves the outcome of psychological and sociological processes, including the chooser's own activities and the activities of others in his environment" (March and Simon, 1958: 160). Here, the definition of the situation can be seen as a proxy of anticipated feedback resulting from the previous strategy intertwined with the environmental factors, rather than the nature of the environment itself. For instance, the absence of proper regulations is conventionally viewed as an environmental defect, which obstructs firms' operations and squeezes the growing opportunity of a formal economy (Iriyama, Kishore, and Talukdar, 2016). However, it is precisely the lack of formal institutions such as delay in legislation that stimulates the emergence of new forms of businesses and enables innovative enterprises such as Uber and Airbnb to boom in the first instance. This kind of "institutional voids" gives some start-ups

chances to survive in the name of legitimacy among legal crevices (Webb *et al.*, 2009).

Therefore, the anticipated feedback actually is profoundly shaped by the discrepancy between the strategy and the environment. It seems that if the strategy complies with the environment, the situation they create will be minimally stressful, and hence the problemistic search will hardly occur. On the contrary, if the previous action of a firm mismatches the environment, no matter how justified the action is, the situation the firm molds will lead to negative anticipated feedback, and will be more likely to trigger myopic problem-solving activities. This discrepancy between the goals set by the previous strategy and the performance restrained by the environment is the fundamental motivation of problemistic search (Argote and Greve, 2007).

3.2.3 R&D Investment and Bribery in Emerging Economies

To prove the theoretical argument above, I purposely investigate an extreme situation where firms take the strategy of investing in research and development (R&D) of new products in emerging economies. I propose that this long-term investment in R&D will cause huge strain of negative anticipated feedback given that the environment firms are embedded in is far from favorable and mismatched the strategy to some extent. Under this condition problemistic search such as illegal bribery may happen.

Investing in R&D for the purpose of introducing new products or technologies is a core innovative activity. Once innovative projects succeed, firms can benefit from barriers of imitation and building sustainable competitive advantages (Teece, 2009; Teece, Pisano, and Shuen, 1997). However, the expected high return of this kind of strategy implies huge risk and uncertainty firms confront especially at the early stage of investment (Katila and Ahuja, 2002). Particularly in developing countries, firms hardly commit to R&D investment as it involves in long-term, slow accumulation of capital (Murphy *et al.*, 1993). Therefore, the literature in terms of investigating innovative activities in developing countries is always

extended the sphere of innovation to fringe activities such as signing joint ventures with foreign partners or obtaining new licensing agreements, rather than focused on R&D activities (Acemoglu, Aghion, and Zilibotti, 2006; Ayyagari, Demirgüç-Kunt, and Maksimovic, 2011; Schumpeter, 1942; Segerstrom, 1991). But recently, scholars have gradually noticed that R&D activities are growing in emerging economies (Steinberg *et al.*, 2018; Zhou *et al.*, 2017), where local markets are accelerating and cost of R&D is relatively advantageous (Chan, 2014; Von Zedtwitz *et al.*, 2007).

Although prior research has proposed several explanations of why firms engage in R&D in emerging economies (Krammer, 2019; Zhou *et al.*, 2017), yet relatively little is known about detrimental consequences of a firm's innovative strategy for the organization embedded in the environment characterized by "institutional voids". The lack of necessary institutions can lead to an unstable and inefficient business climate (Khanna and Palepu, 1997; Khanna and Rivkin, 2001). Hence, scholars argue that the research on enterprise strategies in emerging economies should be contextually specific (Hoskisson *et al.*, 2000; Meyer and Peng, 2005; Wright *et al.*, 2005), and extant theories need to be reassessed and extended in order to confront this strategic challenges (Xu and Meyer, 2013b).

As discussed before, whether an environment boosts or impedes a specific strategy and hence leads to positive or negative anticipated feedback is determined by the interaction between the strategy and the environment. Therefore, I suspect that the environmental characters of emerging economies will lead to negative anticipated feedback on R&D investment in the following ways. First, an innovative program normally requires substantial capital support for many years before a new product can be successfully launched and superior profits realized (Chang and Hsieh, 2011). Given government intervention in emerging economy capital markets, it is quite hard for firms without official endorsements to obtain loans from the banking system smoothly and continuously (Zheng *et al.*, 2013). Meanwhile, raising funds

from stock markets or private investors is rare compared with developed countries, which casts the shadow over new product launch and anticipated feedback on R&D strategy. Second, the deficiency of legislation in terms of intellectual property rights and inefficient enforcement of the related laws in emerging markets are widely noticed in the literature (Peng *et al.*, 2017). Once a firm decides to invest in R&D, these institutional deficiencies will affect the firm's future performance profoundly. If the property rights cannot be well protected from being imitated by competitors, the anticipated profits extracting from this innovative strategy will be eroded, and their ambition of improving competitive advantages through innovation will be frustrated. Third, institutional changes are prevalent in emerging economies (Cuervo - Cazurra and Genc, 2011; Santangelo and Meyer, 2011). The volatility in terms of subversion of authorities, instability of regulatory institutions and capricious governance structures increases firms' costs (Xu and Meyer, 2013b). The anticipated result of a long-term strategy like investing in R&D in this uncertain environment will not be optimistic.

Risk-taking behavior like bribery as a response to negative feedback has been reported in the literature (Mishina *et al.*, 2010; Xu *et al.*, 2019). In line with this analysis, I propose that the likelihood of resorting to illegal bribery will increase as a response to negative anticipated feedback stemming from the R&D strategy implemented in emerging economies. As a short-term oriented and problem driven risk-taking activity, bribery can help "grease the wheel " in order to reduce transaction costs and then improve anticipated feedback from innovation activities (Krammer, 2019; Li, 2020). In sum, the unstable and high uncertain characters of emerging economies make firms more fragile once they take R&D strategy. Hence, I propose the situation molded by firms' strategy of investing in R&D in emerging economies may trigger negative anticipated feedback and hence illegal bribery immediately.

Hypothesis 1: *A firm's R&D input has a positive effect on its bribery in emerging economies.*

3.2.4 The Moderating Role of Learning

Organizational learning as another important research direction of the BTOF suggests that the prior experience of a firm's activities can be captured and memorized, and this knowledge accumulated can affect organizational performance later (Argote and Greve, 2007). Empirical evidence shows that the relationship between experience and performance is positive since practice and repetitions enhance efficiency (Argote, 2011).

Specifically, several studies have examined the relationship between a firm's experience and its innovation performance such as new product introductions (Moorman and Miner, 1997; Mulotte, 2014; Nerkar and Roberts, 2004). Investigating 92 new product development projects from 396 firms, Moorman and Miner (1997) find that organizational memory increases both the performance and creativity of new products. Nerkar and Roberts (2004) show that in the pharmaceutical industry, the experience in terms of technological knowledge and product markets help firms realize high initial sales levels of their new product offerings. In the aircraft industry, Mulotte (2014) finds that three different modes of new product introduction such as internal developments, joint development and licensing are able to benefit from the experiential learning in spite of the different marginal performance benefits of experience.

In general, the above studies have observed a positive relationship between experience and performance, which implies that firms are more sophisticated about evaluating the environment and its impact on their innovative strategy when they have experience of success. Since organizations are inclined to interpret the status in quo through their previous experience (Haleblian, Kim & Rajagopalan, 2006), firms that have successfully launched new products will be more able to manage performance expectations compared with those still learning the knowledge about how to adapt to the discrepancy between innovative ambitions and the deficient environment. Thus, the pressure of negative anticipated feedback of R&D

strategy in the context of emerging markets will be reduced by the organizational experience, and the positive relationship between the strategy of R&D investment and illegal bribery will be mitigated if a firm has been engaged in innovative activities and had innovation output.

Hypothesis 2: *Innovation output negatively moderates the effect of R&D input on bribery in emerging economies.*

3.2.5 Alternative Mechanism: The Lens through General Strain Theory

The BTOF has been used as a theoretical framework for articulating the mechanism of corporate illegal behavior when organizations are under the pressure of performance shortfalls (Mishina *et al.*, 2010; Xu *et al.*, 2019). Meanwhile, the pressure stemming from the discrepancy between expectations and actual achievements is merely one kind of strain which may lead to deviant behaviors or economic crimes in line with a renowned sociological theory – the general strain theory. Thus, in order to extend the boundary of the BTOF and provide more nuanced theoretical implications, I advance my research by theory borrowing and bringing ideas from this sociological theory to explain organizational behaviors. I argue that organizational behaviors, especially illegal ones, can be triggered by three different kinds of mechanism, instead of the only pressure of performance shortfalls the BTOF has articulated.

The strain theory provides the theoretical roots of the general strain theory (Agnew, 1992). Merton (1938) observes that the institutional arrangements which refrain individuals from achieving socially accepted goals with legitimate means will lead to crimes, especially materialistic and economic ones. In other words, the economic crime is the result of the strain, which can be defined as a tension between positive individual goals and negative external conditions.

In formulating the general strain theory, Agnew (2001) argues that there are three specific types of strain under the sphere of the failure to achieve positively valued goals. The first type

is the disjunction between expectations and actual achievements, which is also the concrete measurement long elaborated in the BTOF. In particular, the expectations based on an existential reference drives from the comparisons with the individuals' past experience and their counterparts' performance. Most relevant empirical literature falls under this category (Xu *et al.*, 2019). The second type is the disjunction between aspirations and expectations, which emerges when legitimate means cannot realize ideal goals. This is the classic definition of strain from Merton, and the aspiration he emphasizes on is something utopian, but acknowledged and encouraged by society. The third type is the disjunction between the fair outcome and actual outcome that is quite different from the above two. It claims that if the ratio of outcomes and inputs is unequal and underrewarded, individuals will suffer strain from injustice no matter what the outcomes actually are (Hegtvedt, 1990). Individuals expect "that certain distributive justice rules will be followed, and rules specifying how resources should be allocated" (Agnew (1992: 53).

Compared to the articulation of the BTOF, I recognize that the related literature in management only emphasizes on the first strain (discrepancy between expectations and actual performance), but ignores the effect of last two categories (discrepancy between aspiration and expectation; and discrepancy between fair outcomes and actual outcomes) on deviant behaviors firms may take. However, in reality, these two types of strain can play important roles in the relationship between firms' innovative strategy and deviant or even illegal behaviors.

Firms that decide to invest in R&D may have the ambition to change the world or benefit human beings beyond the pure economic consideration (such as Xspace). The aspirational level that innovative activities attempt to achieve is profoundly determined by the social value and external pressure such as whether the culture can tolerate failures, or how much the business environment emphasizes on success, especially economic or material ones (Cullen *et*

al., 2004; Martin *et al.*, 2007). Whereas pragmatic expectations which can be statistically measured by the past performance or the performance of competitors, the definition of aspiration from the GST is quite utopian but is the fundamental motivation in progress of human beings and the core stimulus of innovation. No matter what expectations that firms calculate, the higher aspirational pressure the firms confront in society, the higher strain stemming from the discrepancy between the utopian aspiration and pragmatic expectation. Compared to developed markets which have been moving towards more abstract and less materialistic goals (Burroughs and Rindfleisch, 2002), the extant literature has shown that the materialism and achievement are still prevalent in emerging markets (Sharma, 2011; Wong and Ahuvia, 1998). Hence, when firms invest in R&D in emerging economies characterized with high material achievements, the high aspiration embedded in social values will amplify the positive relationship between R&D input and bribery.

Hypothesis 3: *The strain of aspiration positively moderates the effect of R&D input on bribery in emerging economies.*

As for the discrepancy between fair outcomes and actual outcomes, this strain derives from the concept of equity. Taking a specific strategy referring to a variety of inputs, organizations expect the allocation of inputs will be distributed following a justice rule so that the outcomes produced can be fairly compared to those achieved by other actors in the market. Once they notice that the output/input ratios is not equal to others, the organization will feel distressful, and then may take actions to deal with this strain no matter whether the output is positive or negative (Agnew, 1992).

Institutional voids in terms of shallow capital markets, ineffective legal enforcement, and other political risks seriously impede a firm's ability to invest in innovative projects such as R&D activities (Yang, Sun, and Yang, 2015). However, these defects will be significantly

mitigated if the firm can get connections with the government (Musacchio, Lazzarini, and Aguilera, 2015). For instance, Kotabe, Jiang, and Murray (2017) present that emerging-market firms enhance their capability to acquire resource through political networking, and then facilitate innovative activities. Zhou *et al.* (2017) prove that the state ownership enables firms to obtain access to more resources with low costs to invest in R&D activities. In general, government intervention actually distorts resources allocation in many emerging countries (Hoskisson *et al.*, 2000; Peng, 2003). Therefore, I propose that if firms operating in an environment characterized with a discriminative principle of resource allocation, the strain of unfairness will strengthen the positive relationship between R&D input and bribery.

Hypothesis 4: *The strain of unfairness positively moderates the effect of R&D input on bribery in emerging economies.*

Figure 3.1

Theoretical Framework

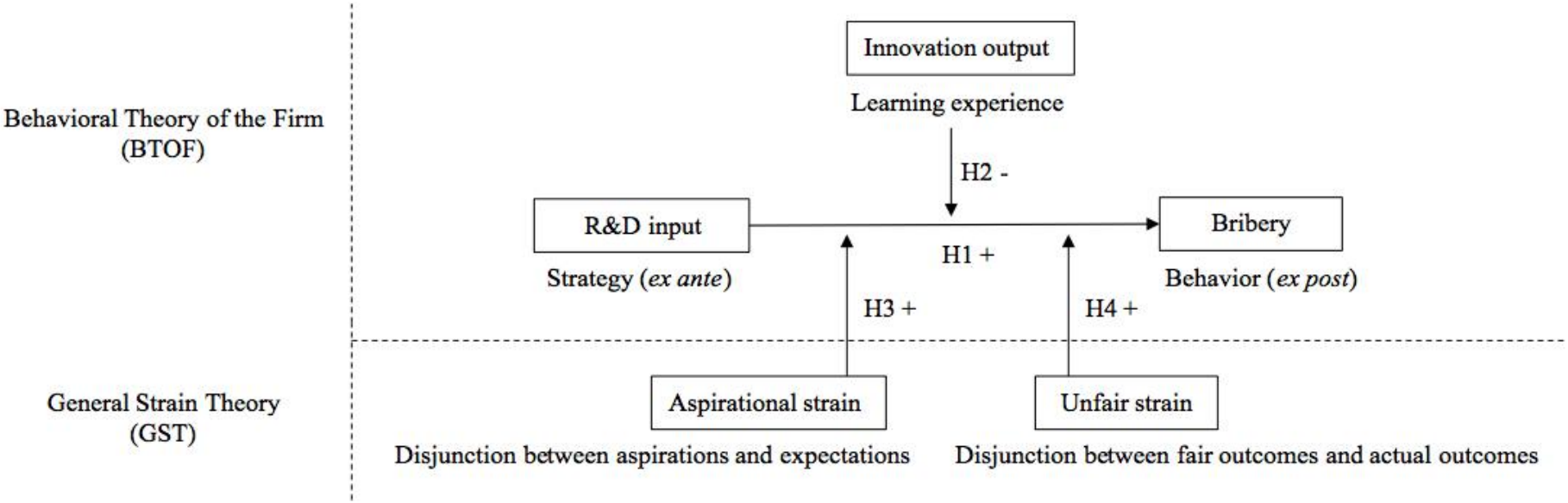


图 0-1

3.3 Method

3.3.1 Sample

I use data from the Enterprise Survey (ES) conducted by the World Bank in developing countries. This database contains detailed information of private firms covering a broad range of business operation in terms of bribery, innovation, firms' characters (age, size, etc.), performance, etc. The ES following a rigorous methodology is stratified by geographic location, firm size and the two-digital International Standard Industrial Classification code. The results yielded by this database are representative, and research in international business often uses it as a reliable resource (Jensen *et al.*, 2010). Given the uniform, comparable methodology across all countries and years has been implemented since 2006, I employ this firm-level data from 2006 to 2017. I exclude firms in the service and retail industries, and restrict my data to manufacturing firms only.

3.3.2 Variables and Measurement

Dependent variable.

The ES database uses many questions to capture the different aspects of corruption. However, absorbing the critics from the previous research (Razafindrakoto and Roubaud, 2010), I deliberately avoid adopting very specific questions which may incur problems such as "inaccurate or selective memory, fear of reprisals by authorities, etc." (Treisman, 2007: 216). Instead, the questions roughly referring to bribery may be more proper in this study. I measure a firm's bribery in two ways. First, I use a dummy variable to indicate whether a firm is involved in bribery from the question named bribery incidence. 1 means that a firm

experienced at least one bribe payment in the last 12 months; 0 means a firm never paid any bribes. Second, I use a continuous variable, bribery depth, to measure the percentage of instances where a firm is either expected or requested to provide a gift or informal payment during solicitations for public services, licenses or permits. I exclude the respondents who think the corruption is the biggest obstacle or the major problem of doing business in their country given that the bribery I define in the theory is an active behavioral change to the pressure rather than a reluctant response to corrupt officials.

Independent variable.

I measure the innovation input from the question "during the last fiscal year, did this establishment spend on formal research and development activities, either in-house or contracted with other companies, excluding market research surveys?" This dummy variable indicates whether a firm invests into R&D activities or not.

Moderators.

The innovation output is measured by the question "during the last three years, has this establishment introduced new or significantly improved products or services?" 1 means the firm has had innovation output; otherwise the indictor is 0.

To capture the aspirational pressure and unfair strain at the country level, I aggregate the individuals' data from the World Value Survey (WVS) in wave 6 from two variables. The first one is "being very successful is important to this person; to have people recognize one's achievement". The scale is from 1: very much like me to 6: not at all like me. Scores are recoded so that a high score means high aspiration pressure. Then, I calculate the

measurement of aspirational strain at the country level using the formula below. First, I calculate the percentage of respondents in a country at each scale ($\frac{n_{xi}}{N_{country}}$). Second, I multiply the score minus the benchmark, which is 1, i.e., $(x_i - 1)$. Finally, I sum all of them to get a final indictor presenting the aspirational strain for each country. Logarithm is necessary as the score is too large.

$$M_{aspirational\ strain} = \log\left[\sum_{x_i=6}^{1} \frac{n_{xi}}{N_{country}}(x_i - 1)\right] \tag{3.1}$$

The second one is "to what extent, do you agree: 1- in the long run, hard work usually brings a better life to 10 - hard work dose not generally bring success — it's more a matter of luck and connections". The higher the score, the higher unfair strain people undertake. As above, I calculate the measurement of unfair strain at the country level using the following formula:

$$M_{unfair\ strain} = \log\left[\sum_{x_i=10}^{1} \frac{n_{xi}}{N_{country}}(x_i - 1)\right] \tag{3.2}$$

More proxy variables in the robustness checks will be discussed in the next section.

Control variables.

I control for a set of firm-level variables that may influence a firm's decision on R&D input and control for firms' heterogeneity. First, I control for *firm size* in terms of the number of permanent and temporary workers. The number of temporary workers is adjusted for the number of months of their employment. Second, I control for the *firm age, i.e., the number of* years elapsed since a firm was established. Third, I control for the *ownership*. 1 means the firm is 100% foreign-owned; otherwise it is 0. Fourth, I control for *export* (dummy variable: 1 when at least 10 percent of a firm's annual sales is derived from direct exports, otherwise 0) to

capture possible differences between domestic-market and export-oriented firms. Fifth, I control for *firm performance* using real annual sales growth, which is measured as the percentage change in sales between the last completed fiscal year and previous one, and all sales values are deflated to 2009 using each country's GDP deflator. Finally, I control for *public* to measure whether a firm is a public company or not, and top managers' working *experience* in the same industry. Besides, I include the year, country and industry fixed effects dummy variables in all the regression models to account for the within-group variation over time, and mitigate the potential bias caused by omitted variables.

3.4 Analysis and Results

3.4.1 Results

Table 3.1 shows the means, standard deviations, and correlation matrix for all the variables. The correlations among variables suggest that multicollinearity is not a major problem, as confirmed by the variance of inflation factor (VIF) ranging from 1.02 to 1.25, which is far below the criteria value of 10.

Table 3.2 demonstrates the estimation results for the impact of innovation input on firms' bribery. Since the measurement of firms' bribery is a dummy variable, I use logistic regression. The year, country and industry effects are fixed by the respective dummy variables in models 1 and 2; while the country effects are not included in models 3, 4 and 5 because the moderators of strains are at the country-level.

Table 3.1

Descriptive Statistics and Correlation Matrix

表格 0.1

	Variables	Mean	Std.Dev.	1	2	3	4	5	6	7	8	9	10	11	12
1	Bribery	0.181	0.385	1.000											
2	R&D input	0.344	0.475	0.068*	1.000										
3	Innovation output	0.49	0.500	0.025*	0.393*	1.000									
4	Aspirational strain	7.685	0.370	0.071*	-0.115*	-0.158*	1.000								
5	Unfair strain	7.079	0.515	0.047*	0.095*	0.068*	0.197*	1.000							
6	Size	2.006	0.774	-0.016*	0.226*	0.143*	-0.052*	0.003	1.000						
7	Age	23.057	17.678	-0.049*	0.098*	0.093*	-0.223*	-0.098*	0.206*	1.000					
8	Ownership	0.095	0.293	-0.020*	0.071*	0.067*	-0.067*	-0.103*	0.188*	0.062*	1.000				
9	Exporter	0.221	0.415	-0.015	0.158*	0.098*	-0.088*	-0.067*	0.295*	0.103*	0.230*	1.000			
10	Performance	1.106	25.131	-0.016*	0.089*	0.072*	-0.030*	0.047*	0.047*	-0.041*	0.016*	0.032*	1.000		
11	Public	0.049	0.215	-0.007	0.059*	0.021*	-0.022*	-0.073*	0.129*	0.120*	0.104*	0.084*	-0.008	1.000	
12	Experience	19.907	11.564	-0.067*	0.050*	0.070*	-0.188*	-0.218*	0.075*	0.326*	-0.027*	0.069*	-0.010	0.015	1.000

* shows significance at the .05 level

Table 3.2
Results from Logistic Regression

表格 0.2

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	Bribery incidence (dummy variable)				
R&D input	0.630***	0.751***	0.569***	0.555***	0.714***
	(0.048)	(0.074)	(0.049)	(0.050)	(0.073)
R&D input × Innovation output		-0.271***			-0.254***
		(0.093)			(0.092)
R&D input × Aspirational strain			0.569***		0.468***
			(0.116)		(0.119)
R&D input × Unfair strain				0.258***	0.157*
				(0.085)	(0.086)
Innovation output		0.234***	0.160***	0.165***	0.251***
		(0.059)	(0.046)	(0.046)	(0.057)
Aspirational strain			-0.155**	-0.072	-0.141*
			(0.076)	(0.074)	(0.077)
Unfair strain			-0.616***	-0.601***	-0.606***
			(0.070)	(0.071)	(0.070)
Size	-0.043	-0.053*	-0.069**	-0.064**	-0.069**
	(0.030)	(0.030)	(0.029)	(0.029)	(0.029)
Age	-0.003**	-0.003**	-0.005***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ownership	-0.004	-0.010	-0.026	-0.025	-0.024
	(0.080)	(0.080)	(0.078)	(0.078)	(0.078)
Exporter	-0.038	-0.039	-0.042	-0.045	-0.042
	(0.058)	(0.058)	(0.056)	(0.056)	(0.056)
Performance	-0.000	-0.000	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Public	0.015	0.018	0.038	0.048	0.047
	(0.101)	(0.101)	(0.100)	(0.100)	(0.100)
Experience	0.001	0.001	-0.002	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-3.543***	-3.661***	3.915***	3.182***	3.694***
	(0.592)	(0.594)	(0.819)	(0.808)	(0.821)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	No	No	No
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	17,085	17,085	17,201	17,201	17,201
Pseudo R-squared	0.0896	0.0906	0.0576	0.0569	0.0583

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3.2 contains the estimation results from the logistic regression both with and without the dummy variable of bribery. Hypothesis 1 predicts that innovation input (R&D) will exert a positive effect on firms' bribery. Consistent with this assertion, the coefficient of innovation input is positive and significant (β=0.627, p=0.000) in Model 1. In terms of the marginal effect, when firms invest in R&D, the likelihood of their engaging into bribery increases 8.13%.

I also report the moderating effects in terms of innovation output, aspirational strain and unfair strain (Model 2, 3 and 4). Hypothesis 2 predicts that the positive relationship between R&D investment and firms' bribery will be mitigated by the experience of launching new products. My finding confirms that the interaction between R&D input and R&D output exerts a negative effect on firms' bribery in Model 2 (β=-0.271, p=0.004), in support of hypothesis 2.

Hypothesis 3 predicts that the positive relationship between R&D investment and a firm's bribery incidence will be amplified with high aspirational strain of a nation. This hypothesis is supported by the result in Model 3 since the coefficient of the interaction item between R&D input and aspirational strain is positive and significant (β=0.569, p=0.000).

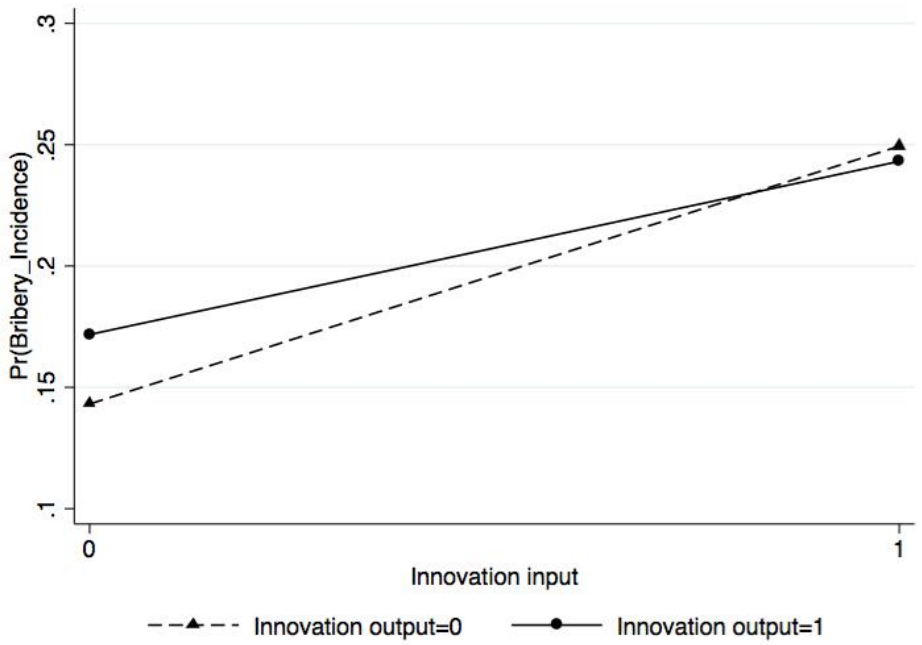
Hypothesis 4 predicts that the strain of unfairness will strengthen the positive relationship between innovation input and bribery. Since the coefficient of the interaction between R&D input and unfair strain is significantly positive (β=0.258, p=0.002) in Model 4, hypothesis 4 is supported.

It is argued that the interaction effect of a nonlinear model may not be truly reflected by the

coefficients and the interpretation of coefficients, and should be combined with the graph (Ai and Norton, 2003; Wiersema and Bowen, 2009). Therefore, I further plot the moderating effects in terms of innovation output (Figure 3.2), aspirational strain (Figure 3.3) and unfair strain (Figure 3.4). I display the effect of innovation input on bribery in a firm with and without innovation output experience respectively in Figure 3.2. It shows that innovation output will suppress the firm's bribery when it invests in R&D activities. Figures 3.3 and 3.4 exhibit the effects of innovation input on bribery when firms operate in a nation with different levels of aspirational strain and unfair strain. Consistent with my predictions, the marginal effects of innovation input on a firm's bribery becomes stronger when the aspirational strain and unfair strain increase. Hence, hypotheses 3 and 4 are supported.

Figure 3.2

The Interaction Between Innovation Input and



Output

图 0- 2

Figure 3.3

The Interaction Between Innovation Input and Aspirational Strain

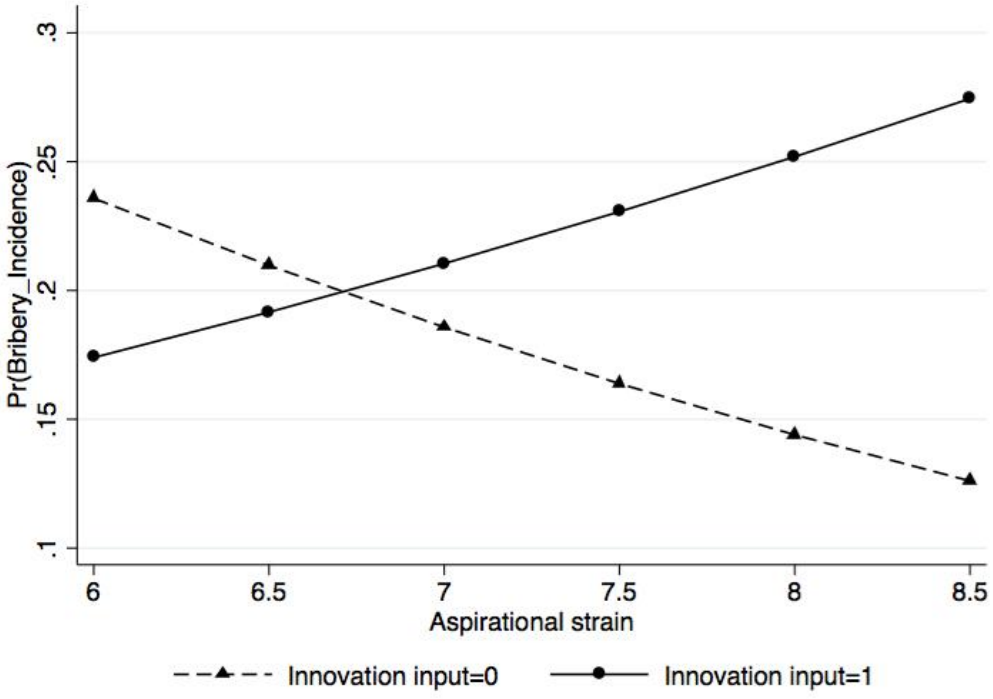


图 0-3

Figure 3.4

The Interaction Between Innovation Input and Unfair Strain

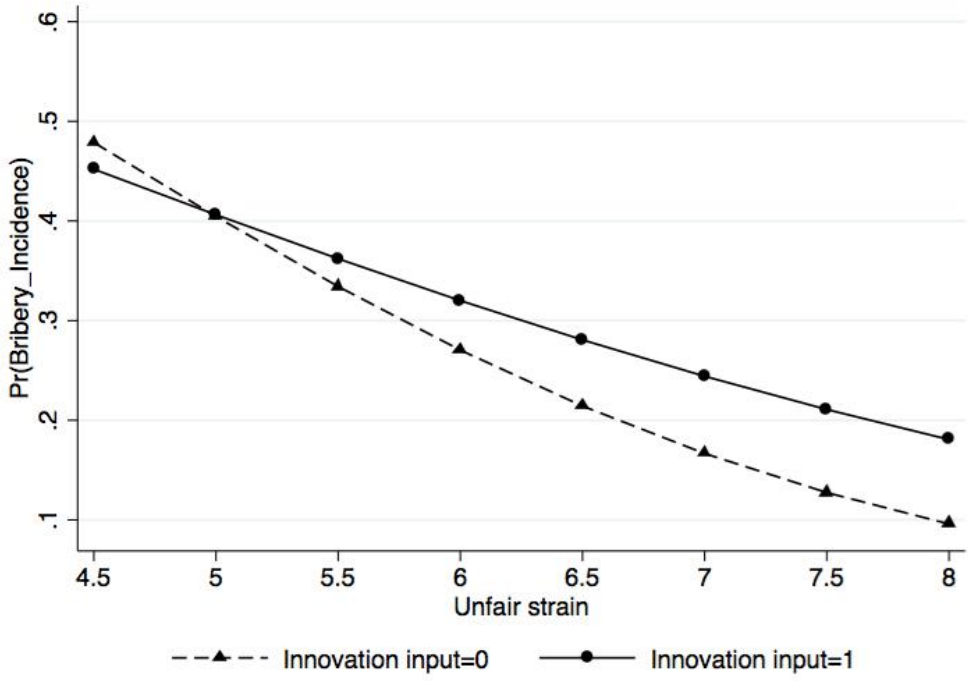


图 0-4

3.4.2 Robustness Check and Additional Analyses

3.4.2.1 Propensity Score Matching

Given the sensitive nature of bribery, non-response rates of corrupt questions are normally quite high. Accordingly, the selection bias is an inevitable problem for any research based on the ES database. To mitigate this problem, I employ the technique called propensity score matching, which "mimics some of the particular characteristics of a randomized controlled trial" (Austin, 2011: 399). To implement this approach, I run a logistic regression to control for observable preexisting traits that can influence the decision of engaging into R&D input. Simply put, the independent variables in this first-stage model are all the control variables used before. Then, I use this model to create a propensity-matching of firms with similar circumstances, where firms engaged into R&D input are called treatment firms, and those not engaged into R&D are control firms. The dealing process is based on one-to-one matching without replacement, and I fix the distance (caliper width equals to 0.05 times) between the treatment firms and control firms to ensure the matched observations are similar.

Table 3.3 provides descriptive statistics by R&D input, with and without propensity score matching, and difference-in-means test for the propensity-matched sample. Given that there are no longer any statistically significant differences in the control variables across the treatment firms and control firms in the post-matched sample, it seems that the matched sample has achieved the covariate balance. The difference-in-means test for bribery incidence in the post-matched sample reveals that the firms with R&D input are more likely to engage into bribery compared to the firms without R&D input. This is consistent with the results in

Table 3.2, and providing additional support for the main hypothesis. As for the marginal effect, under the similar economic circumstances, the rate of bribery incidence of the firms with R&D input is 7.7 percent higher than that of the firms without R&D input (19.2-12.7). This indicates a 55.39 percent increase in the bribery incidence from the baseline rate of bribery for the control firms.

Table 3.3

Results from Propensity Score Matching

	Pre-match				Post-match			
	R&D input	No R&D input	Difference in means		R&D input	No R&D input	Difference in means	
Variables	Mean	Mean	%bias	p-value	Mean	Mean	%bias	p-value
Bribery	0.216	0.162	13.9	0.000	0.216	0.139	19.7	0.000
Size	2.248	1.879	49.3	0.000	2.247	2.248	-0.1	0.971
Age	25.459	21.855	19.8	0.000	25.444	25.188	1.4	0.477
Ownership	0.124	0.079	14.7	0.000	0.124	0.131	-2.4	0.240
Exporter	0.311	0.174	32.4	0.000	0.310	0.308	0.4	0.826
Performance	4.174	-0.512	19.1	0.000	4.158	3.847	1.3	0.470
Public	0.066	0.038	12.4	0.000	0.065	0.067	-0.6	0.780
Experience	20.720	19.549	10.1	0.000	20.714	20.623	0.8	0.670
N	5,911	11,211			5,911	5,911		

Year, country and industry effects are fixed but not shown here.

表格 0.3

3.4.2.2 Testing for reserve causality

Given the cross-sectional nature of dataset, I cannot use traditional methods such as lagging explanatory variables to reduce the possibility of reverse causality. To remedy this concern, I propose that a proper instrument variable should be employed to limit this potential bias. Following (Ai and Norton, 2003; Wiersema and Bowen, 2009), I use two-stage least squares (2SLS) to test whether the main variable has any endogenous problem including reverse

causality, and circumvent bias with instrumental variables. To implement this approach, I use the innovative efficiency ration of a nation as the instrumental variable. This index is published by the World Intellectual Property Organization annually, and shows how much innovation output a given country is getting for its input. I expect that firms will be more likely to invest in R&D activities when the efficiency of innovation is high in a given country. In the developing world, the top five countries are China, Turkey, Vietnam, Ukraine and Bulgaria, and their world rankings are 3, 9, 10, 11 and 15 respectively in 2017. At the same time, it is not clear whether the efficiency of innovation of a country would impact a firm's illegal actions.

Given that the original regression is non-linear, I use command "ivprobit" in STATA to calculate the results for the two stages (Table 3.4). First, the instrumental variable is significantly positive for the independent variable (β=0.297, p=0.000). The F-statistic is 36.70 and larger than 10, which shows the proposed instrument is a valid determinant of innovation input. Then, the result of Wald exogeneity test (p=0.000) rejects the null hypothesis that innovation input is exogenous, which means the result of the second stage (Column 2) is valid. Finally, I run the command "weakiv" to do weak-identification-robust inference. Given that the Anderson-Rubin test and Wald test are highly significant (p=0.000), the weak instrument problem is not present in my estimations. Hence, I can be confident about the results, as reverse causality is not a major issue which would change the prediction of hypothesis.

Table 3.4

Two-stage Least Squares Estimation

表格 0.4

	IV-probit	
	First-stage	Second-stage
Variables	Innovation input	Bribery incidence
Innovation input		8.066**
		(3.23)
Instrument variable		
Efficiency ratio	0.297***	
	(12.80)	
Control variables		
Size	0.102***	-0.669**
	(23.37)	(-3.14)
Age	0.001***	-0.002
	(3.67)	(-0.66)
Ownership	-0.011	-0.030
	(-0.79)	(-0.23)
Exporter	0.091***	-0.894**
	(9.82)	(-2.98)
Performance	0.001***	-0.005**
	(8.60)	(-2.64)
Public	0.027	-0.617*
	(1.47)	(-2.27)
Experience	-0.001***	-0.001
	(-3.74)	(-0.32)
_cons	-0.186***	-2.243*
	(-8.72)	(-2.46)
N	18219	11783
F-test	36.70	
Adjust R^2	0.1473	
Weak instrument tests		
Anderson-Rubin test	chi2 = 52.09	p= 0.000
Wald test	chi2 = 10.41	p= 0.000
Exogeneity test		
Wald test of exogeneity	chi2 = 47.03	p= 0.000

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Year, country and industry effects are fixed but not shown here.

3.4.2.3 Subsamples and other instruments

Subsamples. Since I aim to capture the active rather than passive bribery of firms, I exclude the respondents who believe that the corruption is the biggest obstacle or a major constraint of doing business in this country. I examine whether my results remain the same if I focus on the active bribery of firms. I obtain highly consistent results for all the hypotheses in this subsample (Table 3.5). Besides, the coefficient of innovation input in Model 1 is much higher than that from the original logistic regression (Model 1 in Table 3.2), and I can assert that there is strong evidence supporting hypothesis 1.

Bribery depth and tobit regression. The ES database allows me to measure bribery in terms of the percentage of instances where a firm is either expected or requested to provide a gift or informal payment during solicitations for public services, licenses or permits. As this continuous variable is left censored at 0, I also use tobit regression to estimate the model. I find that all the hypotheses are supported as the directions and significant levels of the coefficients remain the same (Table 3.6)

Table 3.5 Results from Subsamples

表格 0.5

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	Bribery incidence (dummy variable)				
R&D input	0.816***	0.929***	0.753***	0.712***	0.853***
	(0.068)	(0.098)	(0.070)	(0.074)	(0.101)
R&D input× Innovation output		-0.265**			-0.252*
		(0.128)			(0.129)
R&D input ×Aspirational strain			0.541***		0.380**
			(0.178)		(0.181)
R&D input ×Unfair strain				0.420***	0.340**
				(0.136)	(0.137)
Innovation output		0.187**	0.080	0.088	0.186**
		(0.085)	(0.066)	(0.066)	(0.085)
Aspirational strain		0.150	0.056	0.144	0.082
		(0.118)	(0.124)	(0.119)	(0.125)
Unfair strain		-0.548***	-0.562***	-0.536***	-0.547***
		(0.116)	(0.114)	(0.116)	(0.114)
Size	-0.125***	-0.133***	-0.132***	-0.127***	-0.131***
	(0.043)	(0.042)	(0.042)	(0.042)	(0.042)
Age	-0.003	-0.005**	-0.005**	-0.005**	-0.005**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Ownership	0.010	-0.029	-0.023	-0.013	-0.014
	(0.115)	(0.112)	(0.112)	(0.112)	(0.112)
Exporter	0.025	0.003	0.006	0.004	0.007
	(0.084)	(0.081)	(0.081)	(0.081)	(0.081)
Performance	-0.001	-0.002*	-0.002*	-0.002	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Public	0.016	0.096	0.095	0.114	0.117
	(0.141)	(0.140)	(0.140)	(0.140)	(0.140)
Experience	-0.003	-0.006*	-0.007**	-0.006*	-0.006*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	-4.259***	0.981	1.900	1.056	1.572
	(0.864)	(1.280)	(1.318)	(1.280)	(1.316)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	No	No	No
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	9,702	9,811	9,811	9,811	9,811
Pseudo R-squared	0.108	0.0790	0.0795	0.0796	0.0806

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3.6 Results from Tobit Regression

表格 0.6

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	Bribery depth (continuous variable)				
R&D input	0.345***	0.446***	0.322***	0.312***	0.428***
	(0.028)	(0.045)	(0.030)	(0.030)	(0.045)
R&D input × Innovation output		-0.204***			-0.179***
		(0.057)			(0.057)
R&D input × Aspirational strain			0.373***		0.314***
			(0.071)		(0.074)
R&D input × Unfair strain				0.152***	0.079
				(0.053)	(0.055)
Innovation output		0.162***	0.092***	0.094***	0.152***
		(0.036)	(0.029)	(0.029)	(0.036)
Aspirational strain		-0.039	-0.082*	-0.041	-0.077*
		(0.045)	(0.047)	(0.045)	(0.047)
Unfair strain		-0.380***	-0.383***	-0.369***	-0.376***
		(0.041)	(0.040)	(0.041)	(0.040)
Size	-0.036**	-0.048***	-0.048***	-0.045**	-0.048***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Age	-0.002**	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ownership	-0.011	-0.033	-0.028	-0.027	-0.028
	(0.047)	(0.048)	(0.048)	(0.048)	(0.048)
Exporter	-0.025	-0.035	-0.029	-0.033	-0.029
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Performance	-0.000	-0.001	-0.001	-0.001	-0.001
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Public	0.010	0.027	0.027	0.032	0.032
	(0.061)	(0.062)	(0.062)	(0.062)	(0.062)
Experience	0.001	-0.001	-0.001	-0.001	-0.001
	-0.036**	(0.001)	(0.001)	(0.001)	(0.001)
Constant	-1.909***	1.954***	2.345***	1.939***	2.228***
	(0.326)	(0.495)	(0.498)	(0.494)	(0.499)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	No	No	No
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	17,203	17,203	17,203	17,203	17,203
Pseudo R-squared	0.0773	0.0486	0.0491	0.0483	0.0497

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Alternative instruments for moderators. I use the answer to the question "during the last three years, has this establishment introduced any new or significantly improved process" to substitute the index of innovation output. The proxy variable for the aspirational strain is "it is important to this person to be rich; to have a lot of money and expensive things". The scale is from 1: very much like me to 6: not at all like me. Scores are recoded so that a higher score means higher aspirational strain in terms of being rich. Since all the argument of unfairness in the theoretical part is based on the different ownership between private-owned and state-owned, the proxy variable of unfair strain is "to what extant, do you agree: 1- private ownership of business and industry should be increased to 10- government ownership of business and industry should be increased". Scores are recoded so that a high score means high unfair feeling about ownership. As indicated in Table 3.7, the hypotheses are supported except hypothesis 2. It seems that learning experience is not as important for incremental innovation as t for radical innovative investments. Different domains of innovative experience may draw different results, which still consists with the previous literature (Eggers and Suh, 2019; Le, 2017)

Table 3.7 Results from Other Instruments for Moderators

表格 0.7

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	Bribery incidence (dummy variable)				
R&D input	0.630***	0.499***	0.489***	0.471***	0.496***
	(0.048)	(0.092)	(0.049)	(0.051)	(0.090)
R&D input × Innovation output		0.074			-0.033
		(0.104)			(0.103)
R&D input ×Aspirational strain			0.466***		0.293***
			(0.071)		(0.097)
R&D input × Unfair strain				0.756***	0.425***
				(0.115)	(0.156)
Innovation output		0.218***	0.285***	0.290***	0.297***
		(0.058)	(0.048)	(0.048)	(0.056)
Aspirational strain			0.006	0.059	0.033
			(0.089)	(0.090)	(0.090)
Unfair strain			-0.287***	-0.371***	-0.331***
			(0.087)	(0.090)	(0.091)
Size	-0.043	-0.053*	-0.066**	-0.065**	-0.066**
	(0.030)	(0.030)	(0.029)	(0.029)	(0.029)
Age	-0.003**	-0.003**	-0.004***	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ownership	-0.004	0.004	-0.003	0.002	0.001
	(0.080)	(0.080)	(0.078)	(0.078)	(0.078)
Exporter	-0.038	-0.040	-0.055	-0.052	-0.053
	(0.058)	(0.058)	(0.056)	(0.056)	(0.056)
Performance	-0.000	-0.001	-0.001*	-0.001	-0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Public	0.015	0.002	0.038	0.053	0.046
	(0.101)	(0.101)	(0.100)	(0.100)	(0.100)
Experience	0.001	0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-3.543***	-3.619***	0.566	0.786	0.702
	(0.592)	(0.595)	(0.859)	(0.863)	(0.864)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	No	No	No
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	17,085	17,033	17,150	17,150	17,150
Pseudo R-squared	0.0896	0.0912	0.0556	0.0554	0.0560

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

3.5 Discussion and Conclusion

This study seeks to untangle whether firms take a deviant risk-taking action under the pressure of anticipated negative feedback triggered by a previous strategy without explicit, observable performance shortfalls, and how the environmental context plays the role in the process of decision-making. Guided by the BTOF, I find that innovative firms are more likely to resort to illegal bribery in the emerging markets characterized with institutional voids as the anticipated feedback of investing in R&D tends to be negative. I also find that the possession of relevant experience (i.e. R&D output) enables firms to alleviate the motivation to deal with problems via (or by using) bribery. In addition, I extend the theoretical model by explaining deviant behaviors from the insights of GST, and indirectly prove that, in line with the BTOF, the other two categories of pressure, strain of aspiration and unfairness, play a similar role to that of expectations in explaining the innovation – bribery relationship. My study contributes to theory development and management practices in the following ways.

3.5.1 Theoretical Contribution

First, I analyze the reason of organizational behavior changes by focusing on firms' potential and dynamic anticipation, rather than explicit and concrete performance records. This focus allows me to take a more nuanced and practical approach to examining the relationship between R&D investment and bribery, using BTOF to explain why firms originally intending to build long-term competitive advantages may divert towards an illegal, risk-taking solution. The prior BTOF-based studies use the explicit performance feedback as the only predictor of problemistic search, assuming that the decision-making process and behavioral changes are based on a strict comparison between expectations and the recorded performance. However, the core of BTOF is the concept of bounded rationality, which emphasizes on non-optimal decisions made by an organization in accordance with the limited information and bias preferences. Cyert and March (1968) also point out that it is the evidence of bounded

rationality that will be demonstrated by no obvious time interval between previous strategies and subsequent responses due to the unconscious reaction rather than the prudent evaluation. The cycle of strategy – feedback – reaction actually is dynamic. It would be too late for firms to react until the concrete performance results are available. Hence, once a strategy is formulated, a firm will consistently monitor the fit between the strategy and business environment, and adjust actions based on its anticipations. As a result, I often observe the relationship between strategy and reaction, while the feedback which draws from the previous strategy and determines the subsequent response is only anticipated and unobservable. My research highlights this possibility and provides a clear explanation of anticipated feedback, and extends the boundary of performance feedback defined by the previous empirical studies.

Second, I offer and empirically test the behavioral mechanism pertaining to a specific context – emerging markets in my study. Whereas prior research shows their attention to institutional arrangements through deploying moderating effects (Krammer, 2019; Xu *et al.*, 2019), I believe that the environment should be viewed as an paramount factor and discussed as the direct mechanism in the relationship between R&D strategy and bribery. Given the delineation of the BTOF, the external environment is an important force which can be endogenized to be an impartible decision-making process, rather than just an exogenous factor which only magnifies or shrinks the existing relationship. Therefore, my study tests the theoretical framework by deliberately setting the context in emerging economies in order to investigate the underlying effect of the environment on firms' anticipated feedback and process of decision-making.

Third, I contribute to the literature about the antecedents of deviant behaviors or illegal actions by testing other two kinds of strain described in the GST from sociology. I prove that the discrepancy between expectations and actual achievements is not only the mechanism for problemistic search, but also one category of pressure which may trigger economic crimes

such as bribery. Although I have not explored this aspect further, integrating views from the different disciplines can broaden our horizon and deepen our understanding of illegal behavior such as bribery.

3.5.2 Practical Implications

My results also provide some practical implications. Bribery is a prevalent phenomenon in many countries, which seriously undermines innovation and economic growth (Anokhin and Schulze, 2009; Cuervo-Cazurra, 2016; Murphy *et al.*, 1993). How to detect and prevent this problem thus is a tough but critical task for policy-makers and regulators. My findings suggest that innovative firms actually are vulnerable as they confront the pressure of launching new products and exerting profit to improve performance, and then have high tendency to bribe in emerging economies. Hence, governments should pay close attention to innovative firms even they are conventionally viewed as a kind of long-term oriented, creative organizations. Regulators and investors should also pay attention to younger and smaller firms, as they are likely to resort to bribery when aspirational and unfair strain amplified by the environment (the coefficients of firms' age and size are significantly negative). Whereas some prior studies find that innovation output will lead to bribery or corruption (Ayyagari *et al.*, 2014; Krammer, 2019), my research brings us back to a neutral position on innovation. Engaging in R&D activities may push firms to go astray when investments themselves are too risky, but having innovative experience such as successfully launching R&D outputs will restrain firms' tendency to bribe according to my evidence. To policy-makers and investors, therefore, the possibility to bribe should be evaluated in different phases of innovation, which may help restore the public's confidence in innovative firms and judge their innovative activities fairly.

Although I have not directly argued and proven the influence of environment on bribery, I still believe that sound institutions are the fundamental pillars for a clean society. An efficient

capital market, strong judiciary system and stable political environment are essential for all kinds of business including innovative activities. The lower the motivation for firms to search problem solution, the lower the possibility of bribery being triggered by the previous strategy. Moreover, I remind policy-makers of noticing the role of informal institutions in bribery. The risk of bribery will increase when a society is obsessed with success and materialism, or undermines the fairness and justice (Ai and Norton, 2003). Hence, government should pay more attention to and help improve this climate of the whole society.

3.5.3 Limitations and Future Research Directions

Although I propose that unfavorable environments would decrease the anticipated negative feedback of innovation and then induce firms' decisions to engage in bribery, I are unable to observe directly this cognitive process. Unfortunately, the data available for us cannot provide information on the decision-making process I theorized. This difficulty is expected when I designed my research since secondary data would not completely fit my needs. Future research should continue to explore this issue to differentiate more explicit mechanisms. Second, although I examine the moderating effect of innovation output on alleviation of pressure to bribe, there may be benefits to exploring other knowledge or capabilities firms obtain or build to resist on the myopic solution to deal with anticipated performance falling. Finally, my finding implies that the external environment has a complex relationship with illegal behavior from both formal and informal aspects. Future research should continue to examine mechanisms in which a particular one affects firms' behavior changes.

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CHAPTER FOUR

China's Anticorruption Campaign and OFDI:

An Integrated View of Institutional Complexity and Dynamics

Abstract

While research on the determinants of firm internationalization from emerging markets increasingly recognizes the influence of government as a significant institutional force, little attention has been paid to the fact that institutional pressures can be fragmented and institutional logics on firms' OFDI strategy can be contending. There are two institutional explanations for China's booming OFDI over the last decade: institutional support and institutional escapism, based on external legitimacy and internal efficiency. Given institutional complexity and dynamics, how a change in one facet of institutions influences joint institutional forces and hence firms' OFDI decisions largely unknown. In this study I argue that while institutional support remains promoting aggregate OFDI from China, the recent anticorruption campaign negatively affects private enterprises' OFDI as it mitigates the escapism motivation. The anticorruption campaign plays the role in impeding OFDI through the mechanisms of improving financing efficiency and breaking down local protectionism. My intended contribution is to integrate the perspective of institutional complexity and institutional dynamics. Using the recent anticorruption campaign in China as an exogenous shock, I test how change one facet of institutions radically influences the firms' OFDI decisions under the co-existed institutional logics with different directed forces.

4.1 Introduction

While research on the determinants of firm internationalization from emerging markets increasingly recognizes the influence of government as a significant institutional force, little attention has been paid to the fact that institutional pressures can be fragmented and institutional logics behind firm behavior can be contending. For instance, there are two institutional explanations for China's booming OFDI over the last decade: institutional support and institutional escapism. The former acknowledges that government promotion can facilitate firm internationalization (Luo, Xue, and Han, 2010); while the latter focuses on environmental deficiencies that force firms to invest abroad to seek better institutions (Boisot and Meyer, 2008). These contending logics co-exist, but they happen to influence OFDI in the same direction. Given institutional complexity and institutional dynamics, how a change in one facet of institutions influences joint institutional forces and hence firm internationalization largely remains unknown.

To fill this gap, I develop a theoretical framework to examine how a change of institutional complexity that is defined as fragmented and contending institutional logics behind different policies (Greenwood *et al.*, 2011), affects firms' OFDI behavior. Conforming to the logic of legitimacy, Chinese firms invest overseas to respond to the "go-global" policy in which the government supports firm internationalization via favorable institutional arrangements (Luo *et al.*, 2010; Oliver, 1991). This trend has remained for many years. However, in line of the logic of efficiency, a change in another facet in institutions that improves institutional quality will alleviate the motivation of investing abroad according to institutional escapism. How do firms

respond to a change of this institutional complexity? I utilize a recent anticorruption campaign in China as a quasi-natural experiment to examine whether the improvement of institutional quality will restrain OFDI tendency motivated by institutional escapism when the institutional support under the "go-global" policy remains unchanged.

Greenwood *et al.* (2011) propose that a firm's attributes such as its organizational position in the environment and ownership type will influence its experience of tension about institutional complexity, and then determine its response to the incompatible institutional demands. In line with this argument, private ownership enterprises (POEs), as a less legitimate group of organizations in China, are more sensitive to the logic of internal efficiency than external legitimacy. Then, I propose that POEs are more likely to respond to the institutional change caused by the anticorruption campaign rather than insist on their OFDI trajectory shaped by the go-global policy, because "organizations located at the 'periphery' are more motivated to deviate from established practices" (Greenwood *et al.*, 2011: 339). In addition, I propose that the anticorruption campaign reduces the domestic operation cost, and then undermines the motivation of institutional escapism through improving financing efficiency and breaking down local protectionism. Using difference-in-difference method and triple differences method, I prove the above hypotheses.

The present study offers the following contributions to the existing literature. My first intended contribution is to integrate the perspectives of institutional complexity and institutional dynamics. I show how a radical institutional change (anticorruption campaign) can lead to an unintended consequence in the opposite direction to the goal of the original

policy (go-global policy). Given contending institutional logics behind a firm's behavior, a change of one facet of institutions can influence the direction of a specific institutional logic, and therefore the firm's experience of institutional complexity and its responses to the institutional change. Although prior research observes that firms may balance conflicting institutional pressure between external legitimacy and internal efficiency (Luo, Wang, and Zhang, 2017), my study incorporates the concept of institutional change by combining both institutional complexity and institutional dynamics perspectives. I find that with an improvement on institutional quality and alleviation of institutional escapism, the anticorruption campaign slows down the pace of firms' OFDI as POEs are more sensitive to the logic of efficiency more than that of legitimacy.

The second intended contribution is to better specify the relationship between home country institutional change and firms' internationalization strategy, by examining a particular kind of MNE activity (OFDI) as a response to a particular kind of institutional change (an anti-corruption campaign). Conceptualizing institutions in terms of overall "quality" or the "distance" and scoring the measurement of institutions enriches empirical research, but the link between theoretical concepts and empirical indicators remains relatively thin (Jackson and Deeg, 2019) or even incorrect (Cui, 2016). My study attempts to remedy this problem by utilizing a specific event: an anticorruption campaign, which improves institutional conditions, to reversely prove that the underlying motivations and mechanisms of POEs' OFDI are related to institutional change.

Third, I intend to contribute to the literature about corruption. Although the level of

corruption changes over time (Tanzi, 1998), "highly corrupt countries reforming and reducing it, and countries relatively free of corruption becoming corrupt" (Cuervo-Cazurra, 2016: 41), few studies reach the theme of corruption control, and estimate the economic effect of this action. Different from the work of Cuervo-Cazurra (2006, 2008) on the Foreign Corrupt Practices Act which is a legal arm of advanced countries against bribery abroad (host countries), the research about the influence of building an integrity and clean government in a home country on firms' behavioral change has been untouched yet. In addition, problems with measuring corruption, such as subjective bias of perceptive corruption (Jeong and Weiner, 2012; Treisman, 2007) and high non-response rate about sensitive bribery questions (Jensen *et al.*, 2010) impede further research in this field. In this study, open, official records of the Chinese anticorruption campaign allow us to reveal a precise prediction about the relationship between the change of (anti) corruption in a home country and firms' motivation of internationalization.

Forth, I manage to present a more holistic picture of the relationship between an anticorruption campaign and OFDI decisions by testing the mechanism of alleviating the pressure of institutional escapism: improving financing efficiency and breaking down local protectionism. I suggest that clarifying the mechanism both theoretically and empirically will make my argument more convincing.

4.2 Theory and Hypotheses

4.2.1 Institutional Complexity behind OFDI Decision in China

Scholars have recognized that institutional factors are critical for firm internationalization

from emerging markets (Peng, Wang, and Jiang, 2008; Wright *et al.*, 2005). Luo and Tung (2007) propose the springboard perspective in which the purpose of outward investment is to acquire strategic resources and reduce institutional constraints at home. Peng *et al.* (2009) argue that the institution-based view sustains the "strategy tripod" framework for the explanation of firms' international strategy. Meyer and Peng (2016) suggest that analysis about emerging markets should advance the research agenda about institutional paradigm. These institutional studies of firms' international strategy reflect the fact that lacking advantages in terms of technology, branding or managerial capabilities, emerging market firms' motivation of internationalization is fundamentally different from developed market firms, and government plays a significant role in firm internationalization (Wang *et al.*, 2012). Thus, how home country institutions affect OFDI decisions gradually becomes the focus of this line of research (Cuervo-Cazurra *et al.*, 2018). Some studies observe that the co-existence of institutional support and institutional escapism increases OFDI from China, although the influence of the latter is unintended (Li and Ding, 2017). As institutions are complex and dynamic, whether and how a change of government policy influences the holistic picture of institutional environment and then determines firms' OFDI decisions remains unknown.

Institutional support refers to the government policy designed purposively to facilitate international expansion of domestic firms. For instance, the Chinese government designs the institutional arrangements to promote OFDI even through domestic firms may not possess advantages for international competition (Yan *et al.*, 2018). In order to encourage firms' internationalization, the Chinese government initiated the "go-global" policy in 2001, and

implemented a series of policy instruments including streamlining administrative procedures, and providing financial support with low interest rate and favorable exchange rate (Luo *et al.*, 2010). The Ministry of Commerce also helps firms acquire host country information, gain access to business opportunities through bilateral investment negotiations, and even alleviate political risks through inter-government relationships (Wang *et al.*, 2012). In turn, firms tend to conform to the isomorphic institutional pressure to internationalize their business because of their resource dependence, and then gain legitimacy of operation following instructions of the government through investing abroad in response to the national strategy (Cui and Jiang, 2012).

Institutional escapism, on the other hand, emphasizes the unfavorable environment in the home country that impedes their operation in the domestic market, and then unintentionally leads to firms invest aboard to seek better institutions (Witt and Lewin, 2007). Characterized with the institutional weaknesses in terms of lack of continuous capital support, inadequate legal and judicial systems, and high uncertainty and volatility (Santangelo and Meyer, 2011; Xu and Meyer, 2013b), OFDI from emerging markets can be viewed as a passive strategy to circumvent market imperfections based on cost-benefit analysis. For instance, Boisot and Meyer (2008) point out that in China, government interference and local protectionism limit firms to exploit economic benefits since the fragmented markets increase the transaction and operation costs across the nation. The lack of protection of intellectual property rights leads to a fiercely competitive market in which firms have to compete on lower prices and profits (Child and Rodrigues, 2005), and drives firms to move to a less uncertain environment (Luo

et al., 2011). Underdeveloped stock market and inefficient loan market make the cost of financing too high (Morck, Yeung, and Zhao, 2008), and a large number of firms have to raise capital outside China. Consequently, taking the strategy of internationalization, firms escape their home country as a response to the institutional deficiencies and low domestic efficiency. Therefore, the dramatic increase of OFDI from China over the last decade is more likely a coincidence of these two contending institutional forces: institutional support and institutional escapism. The underlying logics of the institutions – external legitimacy and internal efficiency – are mutually compatible by accident. As institutions are complex and dynamic, when an exogenous shock such as an anticorruption campaign changes the function of one facet of institutions, challenges and tensions for firms are inevitably generated. However, how firms respond to the change under the circumstance of institutional complexity has not been studied.

4.2.2 Anticorruption Campaign and Institutional Dynamics

Corruption is a severe and prevalent problem in Chinese society since 1978. It is viewed as a cost to embrace the market economy when the regime has not yet established a proper institution to prevent public power from extracting interest from the private sector (Keliher and Wu, 2016). Despite repeated crackdowns over years, the effort of eradicating corruption has been criticized as "half-hearted and ineffectual" since the anticorruption campaign was a kind of routinized policy that is more likely to deter low- but not high-level corruption from senior cadres in China (Wedeman, 2005). Frustrated with long-lasting corruption, the masses even yearn for "a populist leader to come to the rescue" and a Mao-style political campaign,

i.e., a radical, revolutionary change in order to impede massive corruption and build a clean regime (Li, 2001: 584). To some extent, the new anticorruption campaign initiated by Xi Jinping in 2012 was a response to this call, reflecting a dynamic institutional change from both formal and informal aspects.

First, the enforcement of punishment for corruption was strong and astonishing. This campaign targeted both "tigers" (senior officials) and "flies" (junior officials). Since the 18th Plenum of the Communist Party of China (CPC) in 2012, over 400 provincial/ministerial-level officials have been investigated for corruption and bribery, while only about 30 senior officials were investigated from 2003 to 2012. Wedeman (2005) indicates that four out of five cases were closed without criminal penalties in the 1990s. In contrast, from 2012 to 2015, over 90% of those investigations were transferred to judicial proceedings and over 90% of the concluded cases were prosecuted and convicted (Deng, 2018). In this campaign, a member of the Political Bureau Standing Committee (PBSC), Zhou Yongkang, was sentenced to life in prison for abuse of power and accepting bribes. He was the first member of PBSC who went to jail due to corruption in the history of the CPC. This action overturned the unwritten rule of "PBSC immunity". This is a radical change in decades. Other corrupt senior officials were also expelled from the party and faced up to life sentence including Xu Caihou and Guo Boxiong, the generals and vice chairmen of the Central Military Commission; Lin Jihua, the chief of the General Office of the CPC; Su Rong, the vice chairman of the Political Consultative Conference; Sun Zhengcai, the member of the Politburo of the CPC.

Second, the establishment of the National Supervision Committee (NSC) indicates the fundamental institutional reform of China's anticorruption system (Deng, 2018). Anticorruption routine duties used to be carried out within a "dual-track" system in which the party's Discipline Inspection Committee (DICs) was responsible for investigating corrupt members of the CPC, while prosecutors investigated ordinary corruption cases under the judicial system. However, this "dual-track" system was substantively controlled by local leaders, and a significant percentage of cases were dropped or penalties were mitigated. As a result, there was a suspicion that investigated officials were protected by their bosses (Wedeman, 2005). This institutional weakness is viewed as the underlying reason for failing to crack down corruption (Manion, 2004). The NSC, on the other hand, merges the power from DICs and prosecutors, and becomes the sole agency to coordinate a systematic reform nationwide. Aiming at avoiding the interference of local party leaders and building a long-term anticorruption institution, the NSC absorbs funds, staff, and equipment from local agencies, forming more centralized and autonomous power. This is a tipping point reversing the decentralized process in China over the past four decades (Deng, 2018).

Third, the abovementioned formal institutional changes are coupled with an endeavor of transforming the political culture (Keliher and Wu, 2016). The breeding ground of corruption is embedded in daily practice, such as red-envelope, gift-giving, excessive banqueting or extravagant wedding. It is sometimes quite hard to distinguish the norm of interpersonal communication from the illegal corruption in the purpose of cultivating political nepotism, as Chinese society is characterized with *guanxi* (Luo, 2005, 2008). It is for this reason that Zhou

Yongkang was charged for accepting bribes of only about $118,000, but his family is worth more than billions by an estimation (Keliher and Wu, 2016: 7). Given this, the anticorruption campaign emphasizes the reform of moral discipline simultaneously, making enormous clear regulations, such as an Eight-Point Regulation for official conduct, to rebuild political norms and moral standards for members of CPC, government officials, and even whole society. After implementation of anticorruption campaign, luxury goods imports have experienced a substantial reduction (Qian and Wen, 2015). The stock market has responded positively towards the Eight-Point Regulation, suggesting that the market acknowledges the function of anticorruption campaign and adds value to domestic firms overall (Lin *et al.*, 2016).

In all, the recent anticorruption campaign reflects a relatively substantial, comprehensive improvement of institutional quality, which decreases the transaction cost of domestic operation and then enhances the effect of the institutional logic of efficiency. On the other hand, promoting OFDI is still the priority of "go-global" policy, and institutional support remains the same. The tension between sustaining the external legitimacy via investing aboard and conforming to the improvement of internal efficiency via staying at home emerges along with the change of one facet of institutional complexity. The previous plausibly compatible institutional demands are substituted by the contending or even conflicting direction of institutional pressures. How firms respond to the change of institutional complexity caused by the anticorruption campaign has remained to be examined.

4.2.3 POEs' Response to the Anticorruption Campaign

How do firms respond to the change of institutional complexity? (Greenwood *et al.*, 2011)

argue that the characters of firms, such as ownership or their position in the organizational field, will affect the way firms experience institutional complexity and make them particularly sensitive to certain logics than others, and then determine their response to the institutional change.

Different from most research on SOEs, I focus on the response of privately owned firms (POEs), which are less legitimate and more peripheral organizations in the Chinese context. For POEs, the tension between the logic of legitimacy and logic of efficiency will be severer, since following efficiency is its intrinsic requirement but attaining legitimacy is a requisite condition especially in China.

I posit that the anticorruption campaign plays a negative role in POEs' OFDI tendency while the absolute amount of OFDI still increases. First, due to a lack of direct institutional linkage with the government, POEs are less likely to conform to coercive pressure from the "go-global" policy. The Chinese government maintains economic control through ownership (Dickson, 2003). Government-controlled firms rely on bureaucratic mandates to have access to resources, whereas POEs are subject to market forces (Ferri and Liu, 2010). Thus POEs, owned by the private rather than the public, have relative discretion to respond to the improvement of efficiency resulted from the anticorruption campaign instead of answering the call by the national strategy. Second, POEs have long been subject to systematical discriminatory policies with regard to access to capital, natural resources, and some specific industries domestically (Kolstad and Wiig, 2012; Sutherland and Ning, 2011). As for the international aspect, POEs were prohibited to invest abroad before 2004. And this unfair

policy was not completely revoked until 2007. Thus, the government expectation of POEs to support government priorities such as promoting OFDI has been lower, which mitigates the influence of institutional logic of legitimacy. Third, even the government policy targets all kinds of firms, POEs are more peripheral to the organizational field (Greenwood *et al.*, 2011) and hence less visible compared with SOEs. Therefore, it is more difficult for the government to monitor and scrutinize POEs. Compared with state-owned enterprises, OFDI from POEs is lower in both quantity and quality. The non-response to the "go-global" policy can be less easily detected. In all, I believe that POEs are more sensitive to the institutional logic of efficiency than that of legitimacy, and more willing to adjust OFDI strategy according to the change made by the anticorruption campaign.

Although the internal efficiency consideration dominates the way POEs experience the institutional complexity, the logic of legitimacy still matters. Complying with government policies is an exemplary manner in order to obtain the legitimacy attaching with resource benefits (Oliver and Holzinger, 2008). In China, firms purposively build political or managerial ties with the government especially during economic transitions (Haveman *et al.*, 2017), and firms' performance was indeed improved from the linkage (Sheng, Zhou, and Li, 2011). Therefore, I propose that, while POEs continue to increase OFDI to respond to the logic of legitimacy from institutional support, the anticorruption campaign will slow down the pace of their OFDI given the logic of efficiency. The anticorruption campaign improves domestic business environment and reduces POEs' motivation of institutional escapism.

Hypothesis 1*: The anticorruption campaign has a negative effect on POEs' OFDI.*

4.2.4 The Mechanism of the Anticorruption Campaign

I propose that the anticorruption campaign has a negative effect on POEs' OFDI through the mechanism of improving institutional quality and decreasing the transaction cost. I identify two aspects that the anticorruption campaign is able to mitigate the institutional weaknesses and then increase the efficiency of operation in the domestic market: improving the financing efficiency and diminishing local protectionism.

Financing efficiency

Having access to capital with a low-interest rate is critical for firms' smooth operation, while an underdeveloped capital market impedes normal financing. This institutional weakness is long viewed as an important reason which drives firms to escape their home countries, whereas corruption is an obstacle to improve the efficiency of capital allocation and financial marketization. First, corruption decreases banks' willingness to offer loans in general as the possibility of default on capital, and interest repayment is high in a corrupt environment. (La Porta *et al.*, 1997). Weill (2011) and De Carvalho (2009) prove that corruption prevents firms from obtaining bank loans using the data of Russia and Brazil respectively. Second, some studies have found that in China, firms, especially POEs, have to bribe bank officials for short-term loan (Cai, Fang, and Xu, 2011; Chen, Liu, and Su, 2013), which increases the cost of financing. Moreover, although bribery may grease the wheel in the short term, corruption still diminishes firms' ability to acquire long-term bank credit (Fan, Titman, and Twite, 2012), which fundamentally hurts firms' operation. Therefore, Chinese POEs suffer either the

shortage of capital or predation from corrupt officials. As a result, POEs tend to escape from their home country for a better institutional environment.

The existing research has shown that the current anticorruption campaign has a significant effect on improving the financial environment. Li, Wang, and Zhou (2018) find that the anticorruption campaign reallocates bank loans from SOEs to POEs since the capital allocation is more driven by economic efficiency rather than administrative interference. In addition, POEs gain more bank loans after the shock of anticorruption campaign for both long-term and short-term debt. Using data of Chinese listed firms, Xu and Yano (2017) conclude that the anticorruption campaign affects positively financing and investing innovation since the strong anticorruption action makes firms more likely to obtain long-term debt. Tao (2020) shows that bank loan loss provisions in the Chinese banking system decrease dramatically because the anticorruption campaign reduces financial risk in general. Kim, Li, and Tarzia (2018) observe that the stock market responded positively to the announcement of the anticorruption campaign overall. Ding *et al.* (2020) further prove that the returns of this announcement are significantly lower for SOEs than POEs. Therefore, I can conclude that the anticorruption campaign does improve the financing efficiency, particularly for POEs.

Financial marketization is an instrumental measurement of the degree of difficulty firms finance within a specific environment. Given that China's financial marketization varies largely by regions, some provinces suffer more financing inefficiency than others. Hence, firms in different provinces will have different experiences about the anticorruption campaign in terms of financing efficiency improvement, and therefore have difference degrees of

willingness to make OFDI. Firms operating in provinces with a high level of financial marketization will benefits less from the financing efficiency improvement through the anticorruption campaign than those located in provinces with a low level of financial marketization. Therefore, I predict that firms located in provinces with an initial low level of financial marketization are more likely to decrease their OFDI compared with those in provinces with an initial high level of financial marketization.

Hypothesis 2: *The lower the initial level of financial marketization, the more negative the relationship between the anti-corruption campaign and POEs' OFDI.*

Local protectionism

As an important part of its economic reform initiated in 1978, China's regional decentralization was viewed as an engine of economic growth via provincial competition (Qian and Roland, 1998). However, regional decentralization was also seen as the root of local protectionism (Bai *et al.*, 2004). Imposing a variety of interregional barriers to trade (Young, 2000), implementing discriminatory policies to protect indigenous market and interests (Bai, Tao, and Tong, 2008), and preventing the movement of factors of production (Naughton, 2003), the local governments distorted the resource allocation, fragmented the domestic market and damaged the social welfare. For instance, using data from China's automobile market, Barwick, Cao, and Li (2017) find that through direct subsidies and tax incentives, protectionists successfully promote local brands of automobiles, but the choice distortion resulted in 18.7 billion yuan of consumer welfare loss, equaling 40% of the total subsidies. Under the threat of local protectionism and without an administrative unified

domestic market, the transaction and operation costs were quite high. When the costs of overcoming local protectionism exceed the costs of doing business across international borders, POEs tend to invest abroad (Boisot and Meyer, 2008; Wei, Clegg, and Ma, 2015).

The source of local protectionism comes from three aspects: criteria of promoting officials, rent seeking behavior of local officials, and ineffective regulations from the central government (Barwick *et al.*, 2017). Criticized as an instrument of recentralizing political power for the new leadership (Deng, 2018), the anticorruption campaign alleviates the source of local protectionism unintentionally. First, the evaluation of promoting officials changes from GDP growth to personal cleanness and loyalty. To some extent, the pressure of pushing local economic performance through implementing local protectionism has been mitigated. Second, with highly scrutinized officials' property and daily activities, local government officials are difficult to derive private benefits ranging from acquiring jobs for their relatives to accepting bribes. It undermines the local officials' selfish motivation to continue giving preferential treatments to local firms. Third, compared with the self-benefit local governments, the central government is "relatively long-term orientation and concern with the interests of the country as a whole" (Luo *et al.*, 2017: 324). Concentrating the power from local governments to the central government, the anticorruption campaign makes the regulation of the central government more effective, and restrains the power of local governments to impose local protectionism. Thus, I posit that the more severe local protectionism of a province, the greater shock the province would experience from the anticorruption campaign. Firms located in such a province would be less likely to make OFDI decisions since the

unnecessary cost of doing business from local protectionism is decreased.

Hypothesis 3: *The greater the local protectionism of a province, the more negative the relationship between the anti-corruption campaign and POEs' OFDI.*

4.3 Method

4.3.1 Data

OFDI. I collected OFDI data from the Ministry of Commerce of China from 2008 to 2015. This database contains the subsidiary name, host country, name of the parent company and its location. In order to identify the POEs from other ownership firms, I manually searched the parent companies one by one from Qichacha, an officially authorized website providing firm ownership information. I exclude some OFDI projects for two reasons. First, the direct investments to Hong Kong, Macau and Taiwan were excluded because they are officially parts of China's sovereign territory. Second, the investments to tax havens such as British Virgin Islands, the Cayman Islands and Bermuda Islands were excluded. I aggregated the OFDI project numbers within a province to a specific destination (country) for each year, and the final dataset includes 13,780 OFDI projects of POEs from 31 provinces to 169 countries.

Anticorruption Campaign. I collect data about anticorruption by scrutinizing the Annual Report of the People's Procuratorate for each province from 2008 to 2015. The report contains the information about how many officials are investigated for corruption and bribery within this year. I calculated the average changes in the number of investigated corrupt officials each province before and after 2012, and identified the treatment provinces if the degree of change was above the median to represent provinces suffering a high shock from

the anticorruption campaign (ACC); otherwise the provinces fell into the control group which experienced a low shock from the anticorruption campaign. Equation 1 shows how I constructed of the dummy variable of anticorruption campaign, and Table 4.1 shows the distribution of the treatment and control groups.

$$\mathrm{ACC_{change}} = 1 - \frac{\sum_{2012}^{2015} \mathrm{ACC_{number}}}{\sum_{2008}^{2011} \mathrm{ACC_{number}}} \begin{cases} > \text{median}, \mathrm{ACC} = 1 \\ \leq \text{median}, \mathrm{ACC} = 0 \end{cases} \tag{4.1}$$

Institutional quality. The National Economic Research Institution (NERI) complies an array of indices to measure the institutional development at the provincial level. However, the two sub-indices I are interested, *financial marketization* to indicate the financing efficiency of a province and *product marketization* to indicate the local protectionism of a province, are published every two years. Hence I used the ranking information to identify the treatment and control groups for a triple-difference analysis, and more details will be discussed in the next section.

Table 4.1

Sample Distribution and Statistic Description

表格 0.1

Panel A: Sample Distribution

Province	OFDI	ACC	Autonomous region	Municipality
Beijing	1,106	0		Beijing
Tianjin	274	0		Tianjin
Hunan	475	0		
Ningxia	50	0	Ningxia	
Jiangsu	1,568	0		
Shandong	1,594	0		
Zhejiang	2,170	0		
Liaoning	645	0		
Guizhou	26	0		
Chongqing	142	0		Chongqing
Hainan	60	0		
Guangxi	199	0	Guangxi	
Henan	270	0		
Anhui	233	0		
Shanghai	747	0		Shanghai
Fujian	355	0		
Jiangxi	165	1		
Qinghai	40	1		
Sichuan	366	1		
Shaanxi	110	1		
Hubei	218	1		
Heilongjiang	369	1		
Gansu	53	1		
Xinjiang	288	1	Xinjiang	
Yunnan	320	1		
Heibei	344	1		
Guangdong	1,031	1		
Jilin	234	1		
Neimenggu	237	1	Neimenggu	
Xizang	9	1	Xizang	
Shanxi	82	1		

Panel B: Descriptive Statistics

Variables	Observation	Mean	Std.Dev.
OFDI	13,780	20.007	36.567
Anticorruption	13,780	1483.1	785.228
GDP	13,780	10.876	0.441
Trade	13,780	3.186	2.953
FDI	13,780	2.683	2.312
Population	13,780	4.491	2.293
Education	13,780	0.155	0.152

Control variables. I also controlled for several variables that may influence OFDI at the provincial level. I controlled for *GDP* with a logarithm transformation of the GDP per capita; *Trade* with the value of trade as a share of GDP; *FDI* with the value of foreign direct investment as a share of GDP; *Population* with natural population growth rate; *Education* as the percentage of population with college degree or above. I also controlled for the effects of year, province, country and year*country for different kinds of heterogeneity.

4.3.2 Empirical Model

Difference-in-Difference. I used the difference-in-difference strategy to compare changes in the numbers of OFDI projects for provinces that were differentially affected by the ACC. Specifically, I intended to examine whether POEs slowed down OFDI when the provinces in which they were located experienced a greater shock of the anticorruption campaign. This yields a basic regression equation of the following form:

$$\mathrm{OFDI}_{pdt} = \alpha + \beta \mathrm{ACC}_p \times \mathrm{post}_t + \gamma \mathrm{X}_{pt} + \delta_p + \theta_{dt} + \mu_{pdt} \qquad (4.2)$$

Where *p* indicates provinces, *d* indicates destinations (countries) and *t* indicates years. *OFDI* is the total number of OFDI projects for province *p* to country *d* in year *t*. *ACC* is a dummy variable which equals 1 if the change of *ACC* before and after 2012 is above the median, otherwise it is 0. *Post* equals 1 for years ranging from 2012 to 2015, and 0 for years before 2012. *X* is a vector of control variables; δ indicates the province fixed effects; θ indicates country, year and country*year fixed effects; μ is the error term. The coefficient β on *ACC×post* is the DID estimator which captures the average changes in the numbers of OFDI

in the ACC-high-shock provinces (the treatment provinces) relative to the contemporaneous changes in ACC-low-shock provinces (the control provinces).

4.4 Analysis and Results

4.4.1 Main results

The main results are presented in Table 4.2. In all regressions, the dependent variable is the changes in numbers of OFDI four years after compared to four years before treatment. In Model 1, the regression includes *ACC×post* as an explanatory variable, and the year, country, year*country fixed effects which control for all the heterogeneities in term of investment destination. In Model 2, I also include province fixed effects to control for the provincial characters that do not change over time. In Model 4, I further control for some time-vary province-level variables such as GDP per capita, trade, FDI, population and education that may influence provincial OFDI. For each specification, the coefficient is negative and statistically significant, which supports Hypothesis 1. More precisely, in the four years following the implementation of the anticorruption campaign, POEs located in the high-shock provinces slowed down their OFDI by about 3 investments on average. While this effect may seem modest in absolute terms, the coefficient implies that POEs' OFDI in the high-shock provinces decreased by about 15% compared to POEs' OFDI in the low-shock provinces since the average number of OFDI within a province to a destination per year was 20.

Table 4.2

Main Results from DID

表格 0.2

Variables	Model 1	Model 2	Model 3
ACC × post	-8.710***	-5.543***	-2.887***
	(-13.13)	(-7.55)	(-4.43)
GDP			2.247
			(0.52)
Trade			-13.610***
			(-28.99)
FDI			11.959***
			(18.18)
Population			-0.357
			(-0.98)
Education			-1.525
			(-1.49)
Constant	22.101***	21.450***	9.528
	(94.31)	(100.55)	(0.20)
Province FE	NO	YES	YES
Year FE	YES	YES	YES
Country FE	YES	YES	YES
Country*year FE	YES	YES	YES
Observations	13,563	13,563	13,563
Adjusted R-squared	0.636	0.721	0.757

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.

4.4.2 Validity of DID

***Parallel trend test 1*:** The DID method is based on the assumption that there is no systematic difference between the treatment and control groups before a policy is implemented. Otherwise, the difference in the numbers of OFDI between the treatment and control groups after the implementation of ACC may be driven by a pre-existing trend. To illustrate the

validity of my identification strategy, I plot time trends of OFDI for the high-ACC-shock provinces (treatment group) and low-ACC-shock provinces (control group) in Figure 4.1. It is clear that in the pre-ACC period (2008-2011), there was no apparent difference in the numbers of OFDI between the two groups, which conforms to the DID identifying assumption and alleviates the concern that the result is not valid.

Meanwhile, after 2012, the treated provinces increased their OFDI substantially less than the provinces in the control group. The consistency in timing between the divergence in OFDI and ACC implementation suggests that the ACC did slow down POEs' OFDI.

Figure 4.1

Parallel Trend Test 1

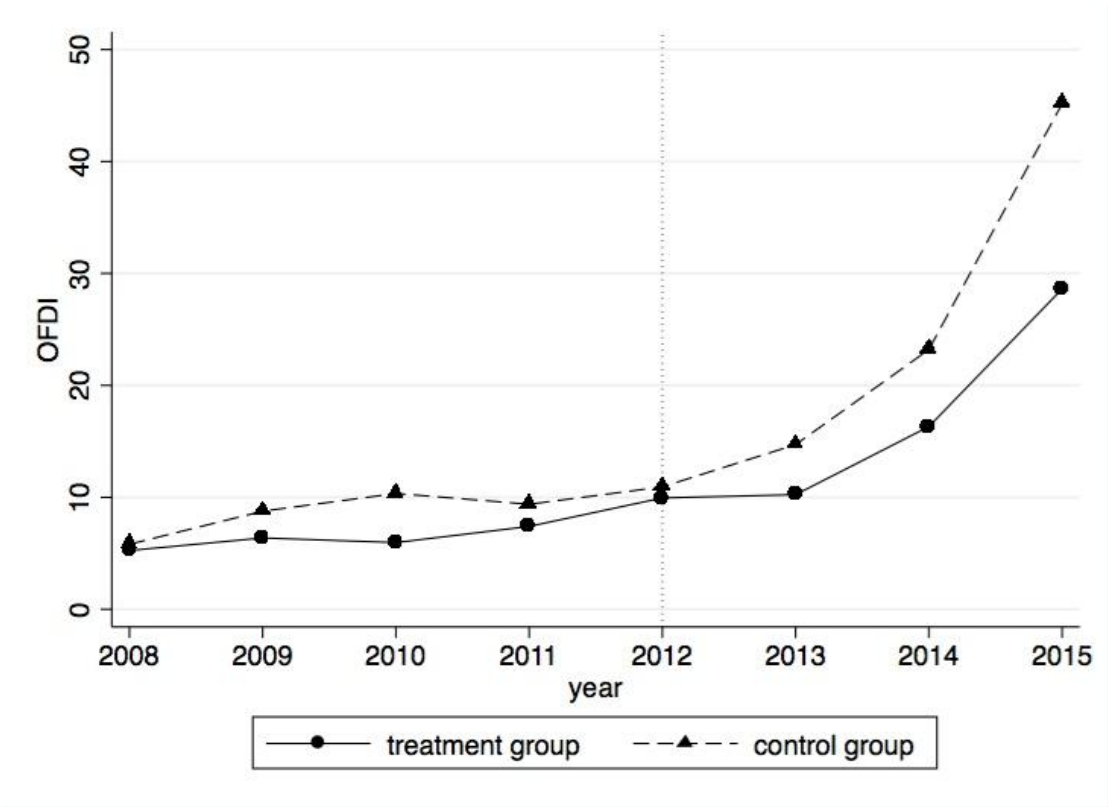


图 0-1

***Parallel trend test 2*:** In my main DID regression model, I used a time dummy variable *post* to separate the pre-ACC and post-ACC accession periods. The estimator β yields the average treatment effect, which compares the OFDI between the treatment and control groups in their average differences between the two periods. The defect of this approach is that the year-by-year changes cannot be shown. Hence, I have extended the original estimation equation in which the interaction term *ACC*×*post* is replaced by a series of interaction terms between *ACC* and each year dummies. This test allows the coefficient β_t to vary across the treatment and control groups from 2009 to 2015, using 2008 as the baseline year:

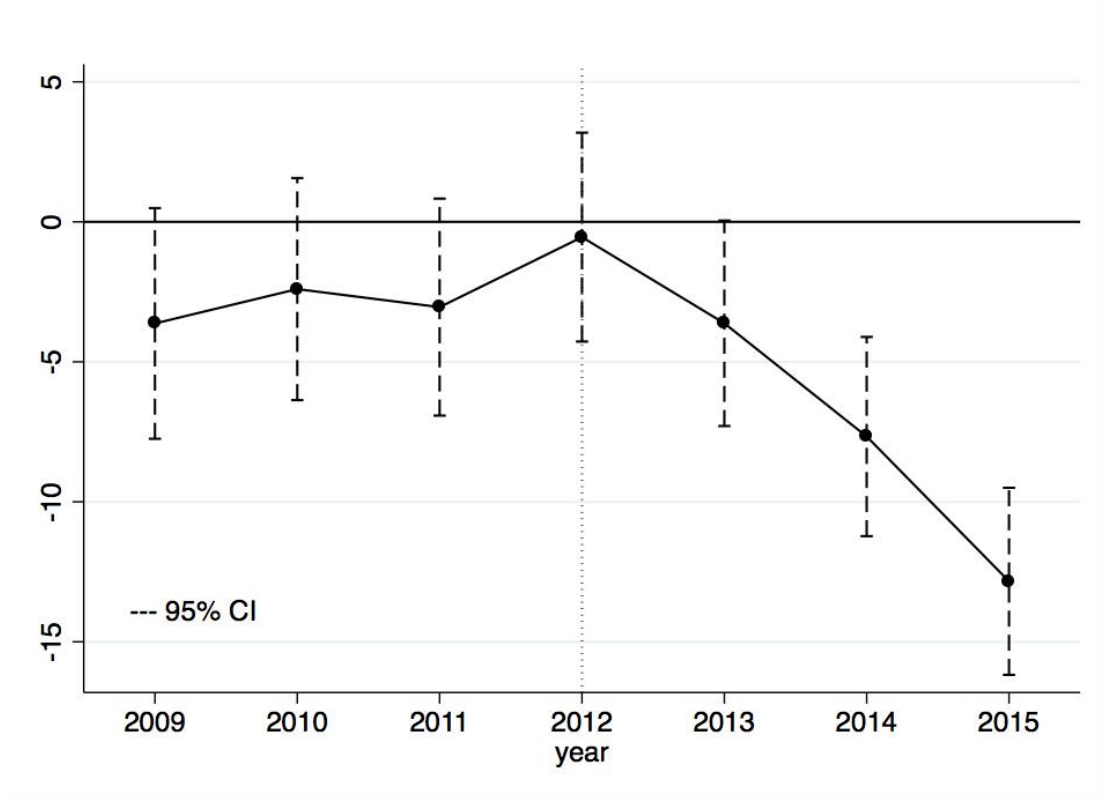
$$\mathrm{OFDI}_{pdt} = \alpha + \beta_t \mathrm{ACC}_p \times \mathrm{post}_t + \gamma \mathrm{X}_{pt} + \delta_p + \theta_{dt} + \mu_{pdt} \tag{4.3}$$

In Figure 4.2, I plot the differences for the coefficients of *ACC*×*post* between the treatment and control groups with the corresponding 95 percent confidence level. It still reveals no systematic difference in the pre-trend for the treatment and control groups. The difference of the coefficients in 2014 and 2015 are negative and significant (the coefficient of 2013 is just on the 95% significant level), suggesting that POEs begin to slow down their OFDI decisions in one year after the implementation of the ACC.

Figure 4.2

Parallel Trend Test 2

图 0- 2



Placebo test 1*: *pre-ACC

I conducted my first placebo test to examine the effect of ACC on OFDI in the per-ACC period. As I discuss before, the assumption of DID is that there is no systematic difference in the changes of OFDI before 2012. In other words, because ACC did not change much before 2012, I should not expect any significant effect of ACC on OFDI before 2012. Otherwise, there may exist some underlying confounding factors that drive changes of OFDI. For the robustness, I have used 2009, 2010, and 2011 as the pseudo years of policy implementation and run DID regressions without expectation for significant effects of DID. The estimators of DID in years 2009, 2010, 2011 are represented in Table 4.3. None of the effects of *ACC*×*post* in pseudo years is statistically significant at the 95% confidence level, Hence, I can rule out

the possibility that some underlying but unobservable factors drive the changes of OFDI.

Table 4.3

Placebo Test 1 of DID

表格 0.3

Variables	2009	2010	2011
ACC × post	-0.194	-0.555	-1.241*
	(-0.29)	(-0.82)	(-1.78)
GDP	15.737***	15.445***	14.914***
	(13.90)	(14.23)	(14.14)
Trade	-0.197	-0.151	-0.071
	(-1.38)	(-1.08)	(-0.52)
FDI	1.346***	1.308***	1.248***
	(7.72)	(7.50)	(7.21)
Population	0.831***	0.813***	0.781***
	(5.90)	(5.78)	(5.56)
Education	7.062***	7.090***	7.267***
	(4.36)	(4.38)	(4.48)
Constant	-158.617***	-155.333***	-149.382***
	(-12.78)	(-13.06)	(-12.93)
Province FE	YES	YES	YES
Country FE	YES	YES	YES
Year FE	YES	YES	YES
Country*year	YES	YES	YES
Observations	13,563	13,563	13,563
Adjust R-squared	0.665	0.665	0.665

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Placebo test 2: random selection of the treatment provinces

Although I have controlled for some variables that may influence the dependent variable OFDI, the possibility that omitted variables at the provincial level may still exist. Toward this end, I have randomly selected 16 provinces to construct a pseudo treatment group (the rest of

provinces are in the pseudo control group), using the same procedure as my main test and re-estimating the coefficient β in Eq. (2). I have repeated this exercise for 1,000 times to avoid the interference of small probability events and plot the probability density of the pseudo coefficients in Figure 4.3. For a visualized comparison, I have also drawn a line for the *ACC*×*post* coefficient based on the actual result in Model 3, Table 4.2 (β=-2.887). Figure 4.3 shows that the pseudo coefficients basically follows a normal distribution, but are largely different from the actual result of the coefficient, which means the omitted variables at the provincial level did not lead to a serious bias.

Figure 4.3

Placebo Test 2

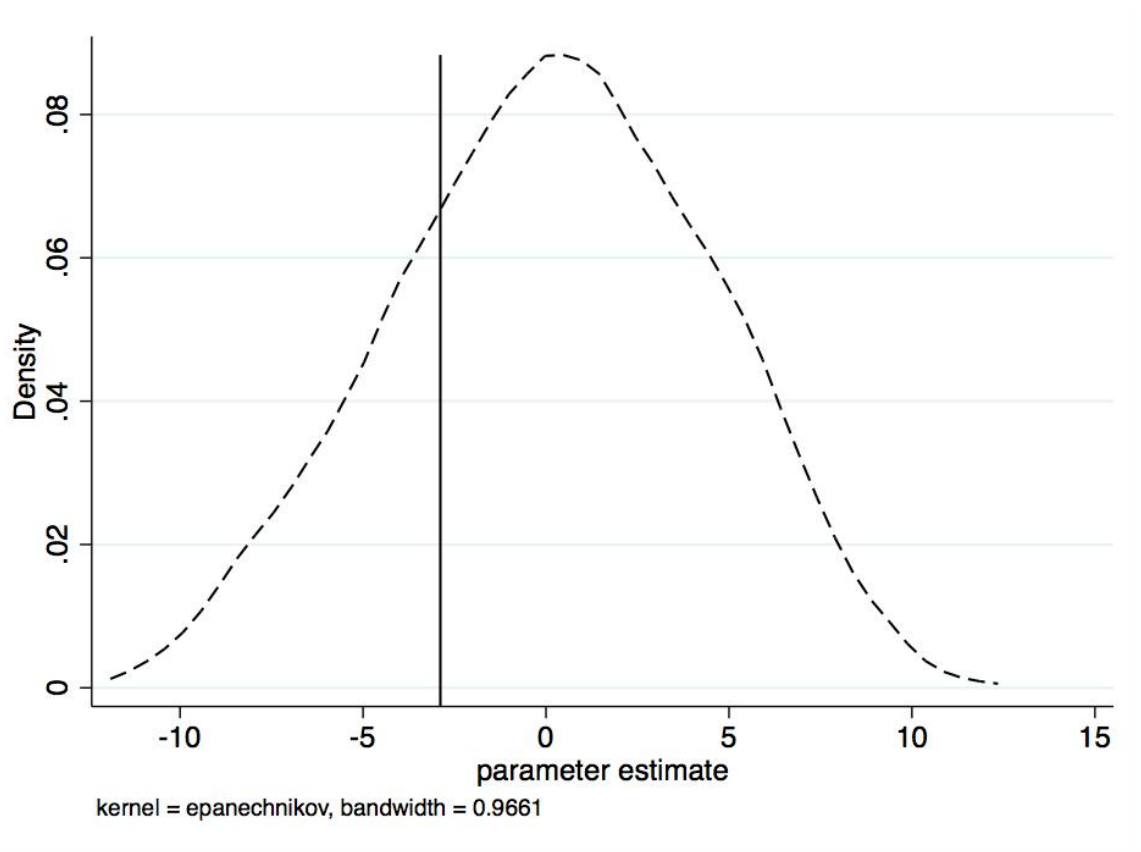


图 0- 3

4.4.3 Other Robustness Checks

I perform several robustness checks to address potential concerns. First, I use two different indices to re-allocate the treatment and control groups. The one is measured by the average changes in the proportion of officials investigated for corrupt in the total number of officials within a province. The other one is measured by the average changes in the numbers of corrupt officials at or above *Chuji*, which is a position commonly considered as a key point on the ladder of political power. The results are shown in Table 4.4, and the coefficients of DID are still negative and significant in all models.

Second, I exclude some provinces for two political reasons. I exclude five regional autonomies for ethnic minorities (Ningxia, Guangxi, Xinjiang, Neimenggu and Xizang, see Table 4.1) where the minority nationalities dominate the population absolutely, and the function of nationwide policy may be distorted by the special demographic and political characteristics. The results are shown in Model 3, Table 4.5. Then, I exclude four municipalities directly under the Central Government (Beijing, Tianjin, Shanghai and Chongqing), and the results are shown in Model 6, Table 4.5. All the results are still consistent with hypothesis 1.

Table 4.4

Robustness Check 1: Different Cut-offs

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Proposition			*Chuji*		
ACC × post	-9.898***	-5.171***	-5.593***	-5.728***	-2.425***	-6.144***
	(-16.88)	(-8.22)	(-9.67)	(-9.87)	(-4.08)	(-9.40)
GDP			-1.726			8.522*
			(-0.40)			(1.88)
Trade			-13.613***			-14.246***
			(-28.93)			(-28.67)
FDI			12.022***			11.333***
			(18.20)			(17.85)
Population			-0.368			-1.014***
			(-1.01)			(-2.69)
Education			-1.956**			-1.907*
			(-2.01)			(-1.88)
Constant	22.825***	21.624***	53.530	21.947***	21.003***	-50.873
	(88.60)	(95.13)	(1.14)	(81.56)	(88.60)	(-1.03)
Province FE	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Country*year FE	YES	YES	YES	YES	YES	YES
Observations	13,563	13,563	13,563	13,563	13,563	13,563
Adjusted R-squared	0.639	0.721	0.757	0.632	0.720	0.758

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.

表格 0.4

Table 4.5

Robustness Check 2: Subsamples

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Exclude autonomous regions			Exclude municipalities		
ACC × post	-9.086***	-5.467***	-3.304***	-6.422***	-3.547***	-2.687***
	(-13.24)	(-7.17)	(-4.87)	(-10.37)	(-5.04)	(-4.22)
GDP			3.324			-8.779*
			(0.73)			(-1.84)
Trade			-13.622***			-11.133***
			(-28.93)			(-23.74)
FDI			12.015***			4.688***
			(18.41)			(10.56)
Population			-0.372			1.831***
			(-1.00)			(4.76)
Education			-1.847*			0.657
			(-1.75)			(0.26)
Constant	22.715***	22.035***	-0.953	19.167***	18.459***	126.434**
	(96.74)	(103.73)	(-0.02)	(86.75)	(84.06)	(2.45)
Province FE	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Country*year FE	YES	YES	YES	YES	YES	YES
Observations	12,771	12,771	12,771	11,289	11,289	11,289
Adjusted R-squared	0.653	0.736	0.771	0.615	0.711	0.735

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.

表格 0.5

4.4.4 Mechanism Test: Triple Differences

In order to examine whether the anticorruption campaign slow down the OFDI through the mechanism of improving the institutional environment, I adopt the triple differences method. Comparing to the provinces with a better institutional basis, I posit that POEs in provinces with less developed institutions will further slow down their OFDI as the anticorruption

campaign leads to relatively more institutional quality improvement in these provinces. Hence, the triple differences equation is below:

$$\begin{aligned} \mathrm{OFDI}_{pdt} = \alpha + \rho \mathrm{ACC}_p \times \mathrm{post}_t \times \mathrm{institution}_p + \eta_1 \mathrm{ACC}_p \times \mathrm{post}_t \\ + \eta_2 \mathrm{ACC}_p \times \mathrm{institution}_p + \eta_3 \mathrm{post}_t \times \mathrm{institution}_p \\ + \gamma X_{pt} + \delta_p + \theta_{dt} + \mu_{pdt} \end{aligned} \tag{4.4}$$

where *institution* is a dummy variable representing the provincial institutional quality before the ACC was implemented. I have identified 10 provinces with the worst rankings on institutional indices in terms of *finance marketization* and *product marketization* in 2012 as the treatment group and their value equals 1. The remaining 21 provinces fall into the control group automatically and their value equal 0. The coefficient ρ on $ACC \times post \times institution$ is the triple differences estimator, which captures the effect of the ACC on OFDI from provinces with less developed institutions compared to that on OFDI in provinces with better institutions.

As table 4.6 shows, the estimator of triple differences in terms of financial marketization in Model 2 has a significantly negative effect, as does the estimator of triple differences in terms of product marketization in Model 4. Thus both hypotheses 2 and 3 are supported. The results indicate that the effect of the ACC on OFDI varies across provinces given the different institutional bases: comparing with the provinces with better institutions, the ACC play a more profound role in the provinces with less developed institutions through improving efficiency of resource allocation (financial marketization) and decreasing distortion of the local protectionism (product marketization).

Table 4.6

Results from Triple Differences

表格 0.6

Variables	Model 1	Model 2	Model 3	Model 4
ACC × post × financial marketization	-23.078***	-7.908***		
	(-10.02)	(-3.90)		
ACC × post × product marketization			-30.493***	-8.026***
			(-12.82)	(-3.96)
ACC × post	-1.759**	-1.778***	-2.187***	-2.780***
	(-2.50)	(-2.71)	(-2.94)	(-4.13)
Post × financial marketization	13.434***	5.865***		
	(9.89)	(5.77)		
Post × product marketization			26.148***	12.175***
			(16.48)	(10.24)
ACC × financial marketization	Omitted (collinear with the fixed effects)			
ACC × product marketization	Omitted (collinear with the fixed effects)			
GDP		1.836		3.915
		(0.43)		(0.90)
Trade		-13.465***		-13.342***
		(-28.79)		(-28.50)
FDI		11.482***		10.882***
		(17.93)		(17.26)
Population		-0.444		-0.403
		(-1.21)		(-1.10)
Education		0.077		2.710***
		(0.08)		(3.03)
Constant	19.881***	14.282	19.070***	-8.124
	(89.73)	(0.30)	(91.44)	(-0.17)
Province FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Country*year FE	YES	YES	YES	YES
Observations	13,563	13,563	13,563	13,563
Adjusted R-squared	0.724	0.757	0.727	0.758

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.

4.5 Discussion and Conclusion

In this study, I examine the effect of the anticorruption campaign on POEs' OFDI to demonstrate that a radical change of institution may result in an unintended consequence since institutional pressures can be fragmented and contending. I argue that the anticorruption campaign plays a negative role in firms' international strategy given the alleviation of institutional escapism and improvement of the home country institutions. Further, this negative effect is more profound in provinces with originally less developed local financial market and more local protectionism as the anticorruption campaign leads to relatively more institutional quality improvement there. These findings offer some theoretical, empirical, and practical contributions.

4.5.1 Theoretical Contributions

First, I contribute to the literature on institutional theory by integrating the perspectives of institutional complexity and institutional dynamics to examine how a change of one facet of institutions will influence firms' experience and behavior. By using the method of difference-in-difference, I can test the causality of a radical change and its effect on firms' internationalization strategy. I use the recent strong anticorruption campaign in China as the setting to examine how the political reform would affect firms' OFDI decision. This allows me to focus on a specific institutional facet and take a more nuanced approach to examine the relationship between institutional changes (improvement) and POEs' internationalization strategy (OFDI). My results show this prediction that the anticorruption campaign, as a welcome political reform to crack down corruption, slows down POEs' tendency to invest

abroad despite that promoting OFDI is the primary goal of the "go-global" policy. This unintended consequence of the anticorruption campaign reflects the disequilibrium from the effect of multidimensional, discontinuous institutional changes.

Further, there are two potential explanations for the dramatic increase of Chinese OFDI from a home country perspective in the related literature: institutional support and institutional escapism. Given the strong determination of the Chinese government for promoting firms' internationalization, academic attention tends to focus on institutional support, especially for SOEs' internationalization. However, I argue that whereas government intervention through the "go-global" policy has been at play, less-legitimate POEs are more likely to be influenced by market forces.

The results show that the anticorruption campaign mitigates institutional weaknesses for POEs, and in return POEs re-direct their OFDI trajectory as the effect of institutional escapism outweighs institutional support in this specific situation. It reminds us that the institutional environment is complex, fragmented, or even contending, and the more nuanced the research context I examine, the more accurate prediction I can make.

Finally, I contribute to the literature on corruption control and its effect on firm behavior by discussing the mechanisms through which some firms benefit more from the anticorruption campaign than others. I find that for Chinese POEs, the main reason for OFDI is to seek efficient operations, low transaction costs, and less-controlled product markets. Once the anticorruption action of a country can release the pressure of two factors: financing inefficiency and local protectionism, the tendency of investing overseas will decline.

These findings suggest that future research in this area should pay more attention to how corruption control will affects firms' decision-making of internationalization.

4.5.2 Practical Implications

For managers in a complex environment, a crucial point for firms' survival and prosper is to respond to institutional demands. As the underlying logics of institutions are different even opposite, firms need to identify them correctly and change firms' strategies accordingly. The dynamic and complex institutional logics require managers to evaluate and search for the optimal point that can balance various external demands. For government, there are three implications. First, policy-makers should be aware that policies they make may have unintended effects on firms. Policies need to be coordinated in a more macro-perspective. Otherwise, unintentional consequences may occur. Second, unlike other literature that proves that corruption deters economic growth or innovations, this research confirms that an anticorruption campaign can improve the efficiency of the domestic market and enthusiasm for domestic investment. Capital flight is rampant in many developing countries, and deters societal development since substantial domestic investment is an important source of economic growth and employment. However, firms tend to escape from poor institutions to seek more resources to support their operations. My study proves that a strong endeavor to crack down on corruption helps to prevent capital flight. Third, although some governments of emerging economies are keen to promote domestic firms' participation in international competition because it may leverage firm capability, policymakers should notice that this kind of effort may result in an institutional disequilibrium, where the firm behavioral pattern can

be easily deviant from the original intention of the policy once market forces are at play.

4.5.3 Limitations and Future Research Directions

I use an anticorruption campaign as an example of discontinuous institutional change in order to examine the influence of home country institutional improvement on firm internationalization strategy. My study suggests several future research directions. First, as firm-level information is unavailable, my empirical test is limited on the province-level and fails to examine the heterogeneity of firms, albeit the data is the full sample of Chinese OFDI. Scholars may try to use different sources of data to re-check the results. Second, the institutional underpinnings of SOEs and POEs are different as I have implied in the theoretical framework. To keep the study concise, and emphasize the function of the nuanced context setting on firm behavior, I only focus on POEs' reaction to this political reform. SOEs' response to the institutional change may be very different since the structure of SOEs in China is more complex than POEs. Future research may continue to explore this important issue, and differentiate different institutional pressures not only for firms with different ownership but also for different kinds of SOEs. Third, although I examined the moderating effects of financing efficiency and local protectionism, other mechanisms in a firm's institutional motivation to initiate OFDI may need to be explored, in order to fully flesh out the influence of (anti) corruption.

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CHAPTER FIVE

Discussion and Conclusion

5.1 Conclusions

This thesis attempts to explore the relationship between a firm's strategies such as bribery, innovation and OFDI and its business environment such as government behavior and corruption. The three specific papers are developed to address this topic at the individual-, firm-, and provincial-level. This thesis holds a slightly different position compared with the conventional academic literature about bribery or corruption which focuses on governmental responsibility and views the accountability of government as the ultimate solution for this issue. In turn, I look into the determinants of bribery from a firm's perspective (Chapter 2 and 3), and explore how government endeavor of combating corruption influence firms' strategy of internationalization (Chapter 4).

In Chapter 2, I have answered question 1: how does a specific actor (i.e. government) in the environment influence firms' decision to bribe; in other words, why do firms use bribery as a non-market strategy when governments imposes constraints on firms? I have used resource dependence theory to explore the influence of asymmetric power relationship between firms and governments on managers' willingness to justify bribery. The findings show that regulatory efficiency has a negative effect on managers' tendency to bribe, and this relationship will be strengthened in a nation with strong political rights. Managers who work in private firms will be more likely to implement illegal rather than legal means to deal with resource constraints imposed by governments.

The purpose of Chapter 3 is to explore how firms' strategy (innovation) triggers bribery as a problemistic search under a specific environment (emerging markets). I have examined the relationship between innovation and bribery under the theoretical framework of behavior theory of the firm. The findings reveal that R&D input will lead to firms' bribery in emerging economies, whereas R&D output will alleviate the positive relationship between innovation input and bribery. Also, aspirational strain and unfair strain of a nation will strengthen the relationship between R&D input and bribery since general strain theory suggests that firms may use illegal means to achieve goals prevented by negative external conditions.

In Chapter 4, I attempt to investigate how the change of corrupt level in the environment influences firms' internationalization strategy (OFDI). Using the recent anticorruption campaign in China as a quasi-natural experiment, I find that corruption control in the home country can restrain POEs' OFDI tendency driven by institutional escapism, while institutional support such as the "go global" policy maintains an aggregate increase in OFDI. The negative effect of the anticorruption campaign on POEs' OFDI is based on the mechanism of improving financing and breaking down the local protectionism.

The summary of hypotheses in each Chapter is shown in Table 5.1. The empirical data from the individual-, firm- and provincial- support all the respective hypotheses.

Table 5.1

The Summary of Hypotheses in the Thesis

Chapter	Hypotheses
Chapter 2	**Hypothesis 1:** Regulatory efficiency of a nation has a negative effect on managers' motivation to bribe.

	Hypothesis 2: Strong political rights of a nation strengthen the negative effect of regulatory efficiency on managers' willingness to justify bribery. **Hypothesis 3:** Working in the private sector mitigates the moderating effect of political rights on the relationship between regulatory efficiency and managers' willingness to justify bribery.
Chapter 3	**Hypothesis 1:** A firm's R&D input has a positive effect on its bribery in emerging economies. **Hypothesis 2:** Innovation output negatively moderates the effect of R&D input on bribery in emerging economies. **Hypothesis 3:** The strain of aspiration positively moderates the effect of R&D input on bribery in emerging economies. **Hypothesis 4:** The strain of unfairness positively moderates the effect of R&D input on bribery in emerging economies.
Chapter 4	**Hypothesis 1:** The anticorruption campaign has a negative effect on POEs' OFDI. **Hypothesis 2:** The lower the initial level of financial marketization, the more negative the relationship between the anti-corruption campaign and POEs' OFDI. **Hypothesis 3:** The greater the local protectionism of a province, the more negative the relationship between the anti-corruption campaign and POEs' OFDI.

5.2 Theoretical Contributions

I examine the three specific research questions based on different theoretical perspectives (resource dependence theory, the behavioral theory of the firm, institutional theory), and my theoretical contributions include a new application of theory (Chapter 2), an extension of the boundary of a theory (Chapter 3), and an integration of two perspectives of a theory (Chapter 4).

In Chapter 2, I have provided a more subtle perspective to understand bribery and posited that managers will view bribery as a strategy to acquire resources and then seek unfair competitive advantages when they problematically depend on their governments. Thus, as long as the power imbalance exists between an entity providing resources and firms, managers tend to bribe regardless of whether the environment is accountable or transparent. With the

assumption that bribery can be viewed as an illegal non-market strategy, this thesis synthesizes illegal and legal non-market strategies into a uniform theoretical framework, which offers a nuanced perspective about the determinants of the choice of non-market strategies and expands the application of resource dependence theory.

In Chapter 3, I have used the behavioral theory of the firm to explain why firms originally intending to build long-term competitive advantages may divert towards an illegal, risk-taking solution such as bribery, and extended the signal of bribery behavior from actual performance feedback to anticipated performance estimation, which generalizes the BTOF in a more realistic way. Borrowing ideas from the GST, I have identified two mechanisms – aspirational strain and unfair strain of a nation, which can be used to intensify firms' bribery tendency when they invest in R&D in emerging markets. These two mechanisms, which have similar functions as negative feedback, extend the boundary of BTOF.

In Chapter 4, through investigating the influence of anticorruption campaign in China on POEs' internationalized strategy, I have successfully integrated the perspectives of institutional complexity and institutional dynamics, and examined the function of opposite institutional logics under the different government policies. I find that the motivation of OFDI is a combination of institutional escapism and institutional support. As the anticorruption campaign improves the institutional quality in terms of easing financing and breaking down local protectionism, the motivation of institutional escapism will be alleviated while the institutional support remain the same. Then, firms will redirect their OFDI behavior in response to the change of this complex institutional environment.

5.3 Practical Implications

The three papers have not only made different theoretical contributions, but also provided practical implications for both managers/firms and policy-makers/governments.

5.3.1 managerial implications

In Chapter 2, I have confirmed that bribery can be used as an illegal non-market strategy to counterbalance their power disadvantage position, which does not imply that bribery is a justifiable way to acquire resources in a healthy society. Now that lobbying and other corporate political activities have a similar function to bribery, but are legal and acceptable, it may be smart to invest in political activities at the early stage and cultivate political connections to deal with the inevitable challenge from the asymmetry dependence of the government.

In Chapter 3, I have investigated the situation that the anticipated negative feedback triggers bribery. The implication for managers in this study is that expectation management is important to prevent problemistic searches such as bribery. Although in reality, information is asymmetric and a decision-making process is far from rational, the more accurate evaluation of the environment firms approaches, the less likely firms will use bribery to deal with negative feedback.

In all, from a firms' point of view, it might be reasonable that bribery can grease the wheel in a short term to some extent, such as alleviating the resource constraints imposed by government, or mitigating an instant pressure stemming from anticipated performance shortfalls. However, as a myopic solution, bribery cannot build actual comparative advantages

in the long run. For instance, in Chapter 3, I prove that accumulating innovative acknowledge will decrease firms' tendency to bribe when firms confront a risk of failure caused by an unfavorable environment. In other words, the core competitive advantage for firms is their capability to launch a new product rather than resorting to illegal means to avoid risks by chance. Thus, firms should never account for survival and prosperity through bribery.

5.3.2 Policy-maker implications

Despite emphasizing accountability or transparency, this thesis demonstrates that governments should focus on cultivating friendly and efficient environments to curb corruption. In Chapter 2, the results show that building democratic channels to respond to firms' demand will mitigate the possibility of firms' bribery. Although asymmetric power relations may not be reversed, providing more efficient administrative services and improving institutional quality can reduce the possibility of bribery since these efforts can alleviate resource constraints firms confront and decrease transaction costs firms operate with. In Chapter 3, institutional deficiencies of emerging markets are the endogenous factors underlying firms' decision-making process of bribery. Besides the improvement of formal institutions, the endeavor of addressing inequality of society and social value of materialistic help to release the pressure of corruption.

On the other hand, the conclusion of Chapter 4 shows that an anticorruption campaign influences POEs' internationalization strategy and reduces firms' willingness to escape the home country. Additionally, the effect of the anticorruption campaign will be more apparent if high-level corrupt officials are cracked down. Government should take action seriously in

terms of combating corruption. Otherwise, the positive effect of an anticorruption effort will not be so evident.

5.4 Limitations and Future Research Directions

Although the thesis is a piece of synthetic research that attempts to extend the understanding of bribery and corruption from multiple sources of data and theoretical perspectives, there are limitations from both sides.

First, I suppose that bribery is one kind of firms' strategy with the implication that bribery can be viewed as an active, supply-side. Although I am devoted to teasing out the different theoretical underpinnings behind the demand-side and supply-side bribery, the empirical data cannot be precisely measured for the existing database. For instance, in Chapter 2, I claimed that compared to the data of bribery collected by the World Bank, the question "will you justify bribery" from the World Value Survey is more suitable for measuring the active bribe. However, I cannot assert that this measurement fully excludes the influence of confronting demand from government officials. The empirical results are far from perfect, while I believe the effort I made allows the existing literature to notice the different mechanisms between demand and supply-side bribery and have a better understanding of the related topics. Future research may work in this direction.

Second, I have not yet covered all the theories that can help us to explore the topic of bribery and corruption. For instance, whereas resource dependence theory provides the baseline for analyzing the relationship between firms and government, agency theory can also explain corrupt relationships between two parties categorized by the agent and the principal. Viewing

engagement of bribery and experience in a corrupt environment as a competitive advantage, the resource-based view offers the argument that firms can operate smoothly or have better performance when they have corrupt knowledge. Therefore, the focus of research about determinants and consequences of bribery and corruption varies along with underlying theories researchers choose. The more perspectives we provide, the deeper understanding of this topic we have, and the more possibility we can ultimately control to at least minimize the damage of corruption. In addition, I limit our research sphere in public bribery which only consists of one aspect of the fact. Private bribery, on the other hand, is important but overlooked in the extant literature. Therefore, I call for more rigorous empirical research about private as well as public bribery with either a qualitative or quantitative method, although data collection can be a difficult endeavor.