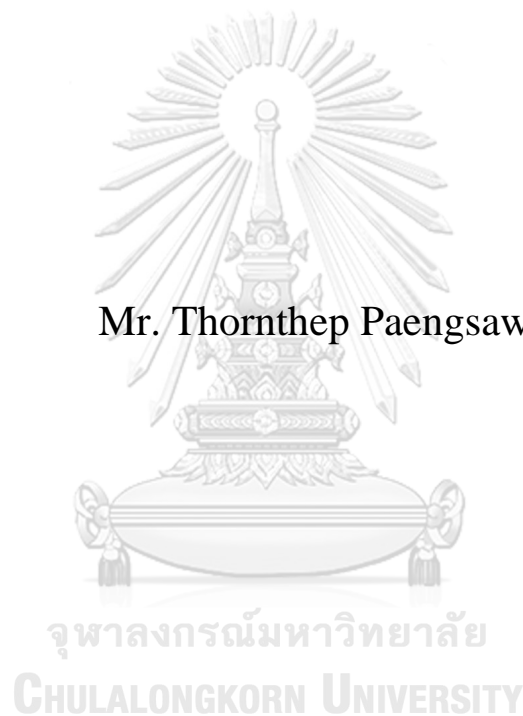


The Impact of Moral Hazard in Institutional Environment On  
the Decision to Perform Partial Acquisition or Full Acquisition

Mr. Thornthep Paengsawat



An Independent Study Submitted in Partial Fulfillment of the  
Requirements  
for the Degree of Master of Science in Finance  
Department of Banking and Finance  
FACULTY OF COMMERCE AND ACCOUNTANCY  
Chulalongkorn University  
Academic Year 2021  
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ผลกระทบของคุณธรรมวิบัติในระดับสถาบันต่อการตัดสินใจในทางเลือกในการควบรวมกิจการ



สารนิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต

สาขาวิชาการเงิน ภาควิชาการธนาคารและการเงิน

คณะพาณิชยศาสตร์และการบัญชี จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2564

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Independent Study Title      The Impact of Moral Hazard in Institutional  
Environment On the Decision to Perform Partial  
Acquisition or Full Acquisition  
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รศ.ดร.มนพล เอกโยกยะ : ผลกระทบของคุณธรรมวิบัติในระดับสถาบันต่อการตัดสินใจทางเลือกในการควบรวมกิจการ . ( The Impact of Moral Hazard in Institutional Environment On the Decision to Perform Partial Acquisition or Full Acquisition) อ.ที่ปรึกษาหลัก :  
รศ. ดร.มนพล เอกโยกยะ

This paper investigates the impact of moral hazard on the corporate strategic decision regarding Mergers and Acquisitions. Whether the decision by the acquirer to make partial or full acquisitions is driven by moral hazard is the main implication of this research paper. Considering several subsamples of mergers and acquisition transactions, in domestic transaction, an increase in private benefits of control does increase the odd of making partial acquisition. Considering the subsample of cross-border acquisitions, private benefits of control still increases the odd of making partial acquisition but the effect is less pronounced. Having control for the profit-maximizing reasons to make full acquisitions, the increase in private benefits of control does not increase the odd of making full acquisition which is implied as wealth-destroying decision. The empirical results align more with the profit-maximizing explanation as the acquirer reacts to the private benefits of control by making partial acquisition instead of making full acquisition.



สาขาวิชา           การเงิน  
ปีการศึกษา        2564

ลายมือชื่อนิติกร .....  
ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

# # 6384026026 : MAJOR FINANCE

KEYWORD

D:

Thornthep Paengsawat : The Impact of Moral Hazard in Institutional Environment On the Decision to Perform Partial Acquisition or Full Acquisition. Advisor: Assoc. Prof. MANAPOL EKKAYOKKAYA, Ph.D.

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Field of Study: Finance

Student's Signature

Academic Year: 2021

Advisor's Signature

Year:

.....

## ACKNOWLEDGEMENTS

I am deeply grateful to Assoc. Prof. Manapol Ekkayokkaya for numerous helpful suggestions and comments. All the remaining errors are mine.

Thornthep Paengsawat



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## 1. Introduction

One of the most popular research topics in the corporate finance field is Mergers and Acquisitions or M&As, transactions that combine the operations of two or more business entities and involve a change in control. Broadly speaking in M&As activities (in some countries are referred to as takeover) one firm purchases shares or control in another firm. Takeover activities can be classified into two broad types: full acquisitions where the bidder acquires more than 50% of the target's shares; and partial acquisitions where the bidder acquires less than 50% of the target's shares. Academics perceived the two modes of takeover as different strategic choices and tried to study into what are the motives or factors behind that lead to the two distinct choices.

Having perceived the different mode of acquisitions as two distinct strategic choices, in corporate world, a company would consist of two main parties which are shareholders (owner) and management (often refer to CEOs). Characterized by asymmetric information, Jensen and Meckling (1976) proposed that under principal-agent relationship, the agent (managers) will always pursue personal benefits through extraction of corporate resources unless he/she owns 100% of the claims or shares. Extraction of corporate resources or private benefit of control may emerge in several forms such as low efforts, shirking and perquisites, or at times, poor investment decisions. The well celebrated empire building hypothesis suggesting managers or controlling shareholders try to increase firm size to pursue defense mechanisms against market discipline is one explanation of poor investment decisions by managers. Most of the empirical evidence on empire building hypothesis often be the relation between the acquirer's announcement abnormal return and firm size. Also, as proposed by several literatures, there are some other factors and motives behind corporate decision

on acquisitions measures. Several of existing literatures investigated through firm-level characteristics and motives for both the acquirers and the targets side (Ouimet, 2013).

Several existing literatures focus on firm-level characteristics of the acquirer and target that lead to the decision on making a full or partial acquisition (e.g. Ouimet, 2013). Moreover, the empirical works in support of the empire-building hypothesis focus on the post announcement abnormal return in determining whether the deal is wealth destroying and what type of acquirers do engage in this type of acquisitions (Amihud & Lev, 1981; Masulis et al., 2007). Distinct from existing literatures, this paper tried to investigate on whether the decision on making full or partial acquisition is affected by moral hazard. However, this paper considers moral hazard in the context of the institutional environment of the country. One form of moral hazard is the moral hazard in employment contract where the agents or the managers pursue personal benefits or “private benefits of control”, rather than acting in the shareholder’s best interests. Different level of private benefits of control of each country is expected to yield different likelihood of observing full or partial acquisition. The theoretical concept of moral hazard or private benefits of control is abstract and is not easily measured or quantified. Dyck and Zingales (2004, p. 542), “If private benefits of control were easily quantifiable, then those benefits would not be private”. However, in their empirical work, they represented a proxy for measuring private benefits of control at country-level. This paper will examine the differences in institutional environment, using this proxy for private benefits of control, to determine whether the degree of private benefits of control inherent in the business environment affects the decision on making a full or partial acquisition. Several existing literatures often focus on deals between acquirers and targets listed in Stock Exchange and most of the times on US

data. However as 80% of the world's M&As deals are populated with unlisted transaction (Draper & Paudyal, 2006; Moeller et al., 2004). Also, the differences between being listed and unlisted acquirers and targets could make one firm more exposed to private benefits of control than the other, thus potentially leading to different results. This paper considered subsamples of unlisted acquirers and unlisted targets as well. Also, M&As activities often involve cross-country acquisitions as well, so the subsample of cross-border acquisitions is also considered. This paper is structured as follows. Section 2 describes literatures review and hypothesis development. Section 3 describes data and methodology used in this paper. Section 4 discusses the empirical results and Section 5 concludes this research paper.

## **2. Literature Review and Hypothesis Development**

### *2.1. Partial acquisition versus full acquisition*

Partial acquisition differs from full acquisition not only on the portion of ownership and controls transferred, but there are several dimensions investigated by extant literatures to what distinct the two modes of acquisitions apart from each other. One dimension is that they differ in term of the wealth effect. Akhigbe et al. (2007) investigated on the cumulative abnormal return (CAR) around the event-period and empirically found that partially acquired targets shareholders experience positive announcement effect. Accordingly, in their comparative study of partial and full acquisition, Amoako-Adu and Smith (1993) found the evidence that the announcement returns for target shareholders are substantially higher in full acquisition than in partial acquisition.

Even though studies suggest one method to yield higher return than the other, however both modes of acquisitions are still prevalent in acquisition activities globally. Some literatures analyzed the motives behind decision on making partial or full acquisition. When uncertainty about the target's return exists, partial acquisition can be viewed as a mean for the acquirer to gain more assessment in which Akhigbe et al. (2007), and Ouimet (2013) found a supporting evidence for this argument. Partial acquisitions can be done for relationship-specific investment where non-financial benefits (e.g., innovations or knowledge) are expected. Accordingly, they also found that partial acquisitions are more prevalent in deals involving acquirers with high patents count. Fee et al. (2006) also observed that some firms do have a minority ownership in their customer-supplier relationship partner. They pointed out that partial acquisition at times, can alleviate incomplete contracting. Apart from gaining valuation of the target, acquisition can be made in pursuit of creation of internal capital market in diversifying acquisition. Theoretically, integration of internal capital market could lead to more efficient resource allocation. But it is not always guaranteed that the integration will be efficient. Because full acquisition is more costly, Ouimet (2013) found that acquirers choose to make partial acquisition to avoid potential cost which may arise in case the internal capital market is inefficient. Another theoretical argument is that partial acquisition can be an effective way of directly financing the target. Ouimet (2013) found that targets with negative free cash flow are likely to be acquired partially. Not only the characteristics on the target side are explored, but the characteristics on the acquirer side are also examined as well. Ouimet (2013) found that full acquisition is more likely for acquirers with low growth options and high free cash flows. Consistently, Morck et al. (1990) found that corporate diversification in a form of

acquisitions is observed in acquirers with poor performance prior to the bid, thus this type of acquirers is more likely to buy a growing target.

## *2.2. Moral hazard in institutional business environment*

In corporate world characterized by asymmetric information and firms being built up of principal-agent relationship between shareholders and managers, moral hazard problem could arise. As mentioned in the previous section, one form of moral hazard is moral hazard in employment contract. Jensen and Meckling (1976, p. 308), “If both parties to the relationship are utility maximizers, there is good reason to believe that the agent will not always act in the best interests of the principal”. One characteristic of such principal-agent relationship in a corporation is “separation of ownership and control” where shareholders (owner) are removed from day-to-day operation activities and remain the residual claimants. Managers are removed from residual risk bearing function while having control over day-to-day operation activities of the firm. Theories suggest that because of the incontractibility of the employment contract (shareholders can only observe the result, not the amount of effort exerted in by managers). This separation of ownership and control is what drives corporate resource extraction by managers as well (Fama & Jensen, 1983). Such wealth expropriation is referred to as “private benefits of control” in which Dyck and Zingales (2004) defined it as the use of corporate resources to the advantage of the controlling party. Such private benefits could take forms of consumption on the job, shirking and perquisites and bad investment decision and these kinds of wealth appropriation is exclusive to just the party that is in control, hence the term private benefits of control. Theories further suggest that manager’s payoff will always be higher with private

benefits as long as they don't own 100% of the firm's shares (Jensen & Meckling, 1976; Morck et al., 1988).

Moral hazard is not only prevalent in firm-level, academics and literatures suggested that agency costs, though not easily, can be observed in environmental- or country-level as well. Such psychic and abstract agency costs are not easily measured or quantified. There are literatures that try to come up with a tool of measurement for moral hazard. Dyck and Zingales (2004) calculated the country-level proxy of private benefits of control by computing the premium paid by acquirer for transfers of controlling blocks.

Another dimension in moral hazard in country-level is associated with investor protection. One way of investor to protect themselves from wealth expropriation, as theories suggested, is to have higher ownership or block ownership. In good investor protection environment, entrenched managers or controlling shareholders can at best overpay themselves or make bad investment decision (Porta et al., 1998). Good investor protection can curb agency problem. Supporting evidence from Porta et al. (1998) showed more concentrated ownership is prevalent in environment with lower level of investor protection. Several laws and finances have examined the dimension of investor protection at country-level. Academics suggested one effective mechanism for investor protection at country-level is through enforcement of regulations and laws. The effectiveness of laws and how well they legally protect minority investor differ across countries with different legal origin (Djankov et al., 2003, 2008; Porta et al., 1998). Porta et al. (1998) invented the "antidirector rights index" measuring how well minority investor are legally protected from controlling shareholders. Djankov et al. (2003) invented "formalism index" and Djankov et al. (2008) came up with "anti-self-dealing

index.” All three empirical works agree that countries with common-law origin have better quality of law and civil-law origin countries.

As several dimensions of partial acquisition have been investigated by extant literatures and academics, most of their focuses are on firm-specific characteristics and announcement returns. The relation between institutional environment and decision on partial or full acquisition decision still remains a territory not sufficiently explored. Rather than specific characteristics and wealth effect, this paper seeks to fill the gap to existing literatures by using country-level measurement of moral hazard.

### *2.3. Hypothesis Development*

In presence of separation of ownership and control, agency theory suggests that there is a misalignment of interests for shareholders and managers. Entrenched managers are more likely to engage in acquisition activity out of managerial discretion even though such investment might not be value-creating for shareholders. Theories further suggested that convergence of interests between shareholders and managers should increase as managerial ownership rises and thus, results in higher valuation of the firm. In accordance with Jensen and Meckling (1976), and Morck et al. (1988), when the owner’s fraction of claims (shares) falls, he/she will be more likely to pursue perquisites through on the job consumption (extraction of corporate resources). Moreover, high free cash flow and low growth options can be a sign of agency problem which can lead to squander of cash by managers or controlling shareholders. One example of private benefits of control is when the firm has extra slack, instead of paying back to the shareholders, managers might engage in acquisitions activity instead.

Evidence from Ouimet (2013) also provides economic reasons for making full or partial acquisitions, implying full acquisition to be more wealth-destroying as well.

Since managerial objectives play a crucial role in corporate strategic decisions, in countries where the degree of country-level private benefits of control is high, firm-level private benefits of control is also expected to be high, there should exist the divergence of interests between shareholders and managers. In deviation from the value-maximizing choice, managers or controlling shareholders are expected to become more entrenched and extraction of corporate resources could be more severe. Theories suggest that effective control of a company is more likely when one is the sole large-block holder than when several block holders exist (Barclay & Holderness, 1989). In full acquisition, acquirers are more likely to become a majority large-block holder in the target firms allowing managers or controlling shareholders to be able to easily extract private benefits (such benefits as overpaying themselves, shirking and perquisites) through the voting rights tied to block ownership. Moreover, having large-block ownership could be an effective defense from successful hostile takeover as well. Such antitakeover provision also helps reduce employment risk of the managers from LBO, or bust-up takeovers (Masulis et al., 2007). Through the mechanism mentioned, this paper makes a hypothesis that full acquisitions should be more likely to be observed in country with higher level of moral hazard or private benefits of control.

### **3. Data and Methodology**

#### *3.1. Data and Sample*

The sample of the hypothesis test is the mergers and acquisitions transactions drawn from the Security Data Company (SDC). Number of partial acquisitions deals, full acquisitions deals, transaction values, and proportion of the target ownership acquired



are collected for both transactions between unlisted firms and firms listed on Stock Exchange (both bidders and targets). For data selection criteria, deals are classified as partial acquisitions if the transactions result in acquirers holding less than 50% of the targets' shares and classified as full acquisitions if the deals result in acquirers holding more than 50% of the targets' shares. Transactions will be restricted only to the "completed" and "unconditional" transactions as indicated by the SDC. The transactions must involve a change in control, so the sample will be restricted to deals where acquirers have less than 5% ownership in the target prior to the deal and the deal must result in the acquirers having more than 5% ownership in the target. Thus, moving from a position of having no control to having control in the target firm. Share repurchases, recapitalization and deals forced by legal requirement are excluded since the deals are forced, they do not reflect the bidder's decisions, thus do not meaningfully reflect private benefits of control. Tender offers are included, however buying of the remaining minority interests to complete a tender offer is not included as it doesn't involve a change control. The sample consists of acquisitions transactions in over 39 countries between the period of 1991-2021 which are collected from the Security Data Company (SDC). Also, the merger and acquisition deals included as samples will be the deals in countries that have the Controlling Block Transfer Premium numbers computed and reported in Dyck and Zingales (2004).

**Table 1:** *Number of Partial Acquisitions and Full Acquisitions by Country*

<i>Country</i>	<i>Full Acquisitions</i>	<i>Partial Acquisitions</i>	<i>Total</i>	<i>Partial/Full Acquisitions</i>
Argentina	1,749	421	2,170	0.241
Australia	19,776	4,741	24,517	0.240
Austria	2,203	415	2,618	0.188
Brazil	6,264	1,164	7,428	0.186
Canada	27,261	5,421	32,682	0.199
Chile	1,510	366	1,876	0.242

Colombia	749	114	863	0.152
Czech Rep.	2,414	364	2,778	0.151
Denmark	3,945	431	4,376	0.109
Egypt	413	403	816	0.976
Finland	3,853	373	4,226	0.097
France	27,032	2,994	30,026	0.111
Germany	24,060	2,045	26,105	0.085
Hong Kong	4,887	1,926	6,813	0.394
Indonesia	1,447	694	2,141	0.480
Israel	1,304	374	1,678	0.287
Italy	10,713	2,281	12,994	0.213
Japan	22,549	6,290	28,839	0.279
Malaysia	6,171	1,291	7,462	0.209
Mexico	2,251	280	2,531	0.124
Netherlands	8,535	510	9,045	0.060
New Zealand	2,625	416	3,041	0.158
Norway	4,818	905	5,723	0.188
Peru	796	135	931	0.170
Philippines	997	509	1,506	0.511
Poland	3,478	1,285	4,763	0.369
Portugal	1,577	430	2,007	0.273
Singapore	4,056	1,262	5,318	0.311
South Africa	3,142	779	3,921	0.248
South Korea	5,189	6,570	11,759	1.266
Spain	12,166	2,079	14,245	0.171
Sweden	8,560	598	9,158	0.070
Switzerland	5,876	625	6,501	0.106
Taiwan	1,163	562	1,725	0.483
Thailand	1,181	1,071	2,252	0.907
Turkey	1,960	686	2,646	0.350
United Kingdom	63,582	3,378	66,960	0.053
United States	221,784	9,030	230,814	0.041
Venezuela	241	50	291	0.207
<b>Total</b>	<b>522,277</b>	<b>63,268</b>	<b>585,545</b>	<b>0.121</b>

**Table 2: Number of Partial Acquisitions and Full Acquisitions by year**

<i>Year</i>	<i>Deals</i>	<i>Partial Acquisitions</i>	<i>Full Acquisitions</i>	<i>Partial/Full Acquisitions</i>
1990	3,169	417	2,752	0.152
1991	5,919	724	5,195	0.139
1992	8,477	1,035	7,442	0.139
1993	8,855	1,100	7,755	0.142
1994	10,530	1,371	9,159	0.150

1995	12,989	1,685	11,304	0.149
1996	14,412	1,816	12,596	0.144
1997	16,380	1,604	14,776	0.109
1998	18,459	1,463	16,996	0.086
1999	18,948	1,854	17,094	0.108
2000	20,484	2,366	18,118	0.131
2001	15,501	1,656	13,845	0.120
2002	14,144	1,412	12,732	0.111
2003	14,854	1,582	13,272	0.119
2004	17,310	1,718	15,592	0.110
2005	20,137	1,914	18,223	0.105
2006	22,644	2,297	20,347	0.113
2007	25,117	2,707	22,410	0.121
2008	23,100	2,985	20,115	0.148
2009	19,637	2,855	16,782	0.170
2010	20,649	2,495	18,154	0.137
2011	21,174	2,219	18,955	0.117
2012	20,849	2,158	18,691	0.115
2013	20,415	1,924	18,491	0.104
2014	22,533	2,133	20,400	0.105
2015	23,424	2,287	21,137	0.108
2016	22,617	2,182	20,435	0.107
2017	23,201	2,462	20,739	0.119
2018	26,135	2,711	23,424	0.116
2019	25,122	2,613	22,509	0.116
2020	22,083	2,834	19,249	0.147
2021	26,277	2,689	23,588	0.114
<b>Total</b>	<b>585,545</b>	<b>63,268</b>	<b>522,277</b>	<b>0.121</b>

Table 1 and Table 2 illustrate the number of both partial acquisitions and full acquisitions grouped by 39 countries in the sample and grouped by 30 years period of the study. The total number of transactions tallies up to 585,545 deals with 63,268 partial acquisitions and 522,277 full acquisitions. Partial acquisitions account for 10.8 percent of all transactions and 12.1 percent proportionate to full acquisitions. On average, partial acquisitions account for 28 percent proportionately to full acquisitions. A notable pattern observed is that the proportion of partial

acquisitions is higher in countries with less-developed markets or emerging markets. The proportion of partial acquisitions does not even make up to 10 percent in countries with well-developed markets such as the United Kingdom, and United States which are the two most active markets for mergers and acquisitions. Better-developed market could imply better investor protection, thus less moral hazard. But the real-world data distributions as illustrated is in conflict to the prediction that partial acquisitions should be more likely in an institutional environment where investor protection is good or moral hazard is low as United Kingdom and United States, the two countries with one of the most well-developed markets, show very little proportion of partial acquisitions to full acquisitions.

### *3.2. Methodology*

This section discusses the methodology including the explanatory variables and empirical framework of this research paper. Independent variables include the private benefits of control proxied by the controlling block transfers premia for 39 countries which are computed and reported by Dyck and Zingales (2004). The other control variables are industry P/E ratio of both target and acquirer, target industry stock market return volatility, and total assets which will be collected from Datastream, Worldscope, and SDC Platinum database. Also, other investor protection measurement indices are collected and are to be used for robustness check.

### *Table 3: Descriptions of Variables*

<i>Variables</i>	<i>Descriptions</i>	<i>Expected sign</i>
Controlling blocks transfer premium	Reported by Dyck and Zingales (2004), premium paid by acquirer for the transfer of controlling blocks computed by the difference in price per share paid by acquirer and price per share on the Exchange after the announcement, divided by price per share on the Exchange after the announcement and multiplied by the size of cash flow right	Negative
Listing status of the acquirer	A dummy variable taking value of one if the acquirer is a firm listed in Stock Exchange	Negative
Listing status of the target	A dummy variable taking value of one if the target is a firm listed in Stock Exchange	Positive
Target industry stock volatility	The stock return volatility of the target's industry will be computed for the 1-year-period prior to the deal. The industry stock return will be retrieved from Datastream.	Positive
Target industry P/E	The target industry P/E ratio retrieved from Datastream	Negative
Acquirer industry P/E	The acquirer industry P/E ratio retrieved from Datastream	Negative
P/E differences	The differences between acquirer industry P/E ratio and target industry P/E ratio	Positive
Relative size	The ratio of the transaction value (from SDC) divided by acquirer's common equity value (from Datastream)	Positive
Antidirector rights index	An index reported by Porta et al. (1998) measuring how well minority investors are protected from expropriation by controlling shareholders. Adding one to the indices when the followings are exhibited: (1) country allows proxy vote, (2) deposit of share prior to the meeting is not required, (3) allows cumulative voting, (4) presence of oppressed minorities mechanism, (5) minimum shares holding requirement to call for an extraordinary meeting not exceeding 10%, (6) no shareholder's preemptive right, then aggregating all six indices into antidirector right index.	Positive

<i>Variables</i>	<i>Descriptions</i>	<i>Expected sign</i>
Formalism index	An index reported by Djankov et al. (2003) measuring quality and speed of the court in resolving simple disputes such as evicting non-paying tenant and collecting bounced check. The index is computed by aggregating the following sub-indices: (1) whether the professional judges and attorneys are needed in resolving disputes instead of laymen, (2) measure whether in each stages of the resolution requires written or oral nature of actions, (3) measure the level of legal justification whether the judges and judgement must be legally justified, also the judgement must be on law (not on equity), (4) measures the level of intervention of the appellate court, (5) measures the level of formalities needed to hold someone liable for the judgement, and (6) count of the procedural actions (steps that require interaction between parties)	Negative
Anti-self-dealing index	An index reported by Djankov et al. (2008) measuring how well the law protects minority shareholders from self-serving transaction where one shareholder has control (holding shares) over both side of the transaction or where there is a conflict of interest. Aggregating the following sub-indices which range from 0 to 1: (1) approval by disinterested shareholders, (2) disclosures by buyer, (3) disclosures by the self-dealing shareholder, (4) independent review, (5) disclosure in periodic filings (e.g., annual reports), (6) standing to sue, (7) rescission, (8) ease of holding the self-dealing shareholder liable, (9) ease of holding approving body liable, and (10) access to evidence	Positive
World Governance Indicator (WGI)	The measurement of quality of governance of countries around the world reported by Kaufmann et al. (2009), in their series of World Governance Indicators research project. Aggregating data from 33 data providers around the world on six dimensions of governance. The six dimensions include: (1) Voice and Accountability, (2) Political Stability and Absence of Violence, (3) Government Effectiveness, (4) Regulatory Quality, (5) Rule of Law, and (6) Control of Corruption	Positive
Government Effectiveness	One dimension of WGI measuring the quality of public and civil service and how independent they are from political pressure	Positive
Regulatory Quality	One dimension of WGI measuring the soundness of policies and regulations affecting private sector development	Positive

<i>Variables</i>	<i>Descriptions</i>	<i>Expected sign</i>
Rule of Law	One dimension of WGI measures the quality of contract enforcement, property rights and the courts.	Positive
Control of Corruption	One dimension of WGI measuring the extent to which public power is exercised for private gain	Positive

### *3.2.1. Empirical Framework*

The focus of this research paper is to investigate whether the decision on undertaking partial or full acquisitions is associated with moral hazard or private benefits of control in each country. In this section, the sample to be used in the hypothesis test and regression models are introduced.

### *3.2.2. Measuring private benefits of control*

In measuring private benefits of control, first pioneered by Barclay and Holderness (1989), and further used by Dyck and Zingales (2004), the premium paid for transfers of controlling blocks is used as a proxy for private benefits of controls. In their empirical work, Dyck and Zingales (2004) reported the block premium computed by the difference between price per share paid by the bidder and the post-announcement trading price per share of the stock on the Exchange, divided by the post-announcement price per share of the stock on the Exchange and times the proportion of cash flows right attached to the controlling blocks. As suggested by theories and academics that one very common motive for acquisition activities is to gain more efficiency in resource allocation or synergies, one might argue that this block premium paid could possibly reflect high expected synergies. However, the estimation of the block premium in Dyck

and Zingales (2004) only involves the transfers of blocks that convey controls or simply the deal that involve transfers of control. To emphasize, the sample excluded deals where acquirers are involved in management, as managers would already have control in the company. The blocks in the sample must be the largest block. Moreover, the sample only included deals where acquirers hold less than 20% of shares ownership prior to the deals, and the deals must result in acquirers holding more than 20% after the deal, implying that the acquirers move from the position of not having control to the position of having effective control. Thus, this would reflect the acquirer's willingness to pay in order to gain, or to buy control. In addition, the change in trading price after the deal (ex-post minuses ex-ante trading price) will reflect the security benefits to all shareholders proportionate to the amount of their ownership reflecting the efficiency shared among all shareholders. However, since the "shared" benefits are already reflected in the post-announcement price, the premium paid by the acquirer (which is higher than the adjusted post announcement security price) will reflect the willingness to pursue private benefits apart from the expected synergies (security benefits). Such benefits arise when one has substantial block ownerships which allow effective control and will be accrued only to the acquirer of the blocks (control group), not shared among all shareholders. Supporting this argument, evidence from Barclay and Holderness (1989) pointed out that in the sample in their analysis, the ex-post exchange prices never catch up with the premium paid. The block premium numbers of 39 countries reported in Dyck and Zingales (2004) will be used as an independent variable represented as *DZ*.

### 3.2.3. Control Variables



Table 3 provides brief descriptions of control variables to be included in the regression model. Extant literatures proposed several factors, motives, or characteristics that explain the probability of partial acquisitions (Ouimet, 2013). One explanation for partial acquisitions motives is relationship-specific investment. Acquisitions can be made to have control over specific asset in which the value of it might be attached to the relationship with the target. Ouimet (2013) supports this argument by empirical evidence that partial acquisitions are more prevalent in acquirers with high number of patents. Patents are usually tied with inherent innovations, and innovations are what give firms growth opportunities. In this paper, industry PE ratio, which reflect growth opportunities as perceived by market participants, will be a proxy for patents and innovation. However, the target could also have high growth opportunities as well. Acquirers want to obtain growth options inherent to targets, while the targets could be reluctant to sell out their growth options. Therefore, another argument is that partial acquisition could reflect equilibrium condition where targets agree to sell just partially. Thus, the impact of industry PE ratio of the acquirers on the decisions on making full or partial acquisitions could vary with the industry PE ratio of the targets. So, an interaction term between industry PE ratio of acquirer and target will be controlled and positive sign is expected. Target financing hypothesis is another explanation proposed by Ouimet (2013). Targets with negative free cash flow are likely to be acquired partially. Selling proportion of their ownership to the acquirer who is better-informed about the target could be an effective way of directly financing itself and certifying itself for future investment opportunities. Correspondingly, Dyck and Zingales (2004) proposed that in financial distress, the bargaining power of the seller is smaller, thus they might be forced to sell their minority controlling blocks as an exit or

to come out of expected financial distress. To identify a target with material exposure to financial distress, the exposure will be proxied by listing status of the target firm as unlisted firms are those often faced with financial constraint of unable to raise external financing through capital market (Farre-Mensa & Ljungqvist, 2016). In addition to the target financing hypothesis, however, the argument could apply for acquirer as well. Listed acquirer would have better access to capital since they have access to the capital market. Therefore, partial acquisition could likely be a result from acquirer's financial constraint as well. Thus, acquirer's listing status will be controlled, and the expected relationship is negative (-) as unlisted could face financial constraints and cannot afford full ownership of the target resulting in partial acquisition. Partial acquisitions should be more prevalent among unlisted acquirers. Another independent variable to be controlled is relative size. Corresponding with the acquirer's financial constraint hypothesis, some transactions can be deemed costly for the acquirers given high transaction value. Thus, partial acquisition could be more likely when the transaction value is high relative to the acquirer's equity value. Relative size will be calculated as the transaction value divided by the acquirer's common equity value (common equity values are collected from Datastream while transaction values are collected from the SDC). So, positive relationship is predicted as the transaction value is relatively high, full acquisitions should be less likely affordable. However, this prediction is in contrast with Ouimet (2013) as she found an evidence that smaller target relative to acquirer are more likely to be a partial acquisition target. Target valuation uncertainty is another determinant of partial acquisitions (Ouimet, 2013). When uncertainty about the target's valuation exists, acquirers might prefer having prior ownership via partial acquisitions to gain better access to the target. Valuation uncertainty of the target will be proxied by

the target's industry stock market volatility. Theories suggests that firms can also view acquisition as a measure of creating internal capital market. Internal capital market allows resource allocation to be more efficient than in external market because firm can avoid external market frictions. However, internal capital market is not always efficient. Firms could be faced with heterogenous investment opportunities which could lead to more efficiency than integration for internal capital market. Full acquisition involves higher cost than partial acquisition (in absolute term) and there is no guarantee of the efficiency of integration. Thus, firms might decide to partially acquire the target to avoid such cost. In support of this argument, Ouimet (2013) found a positive relation between costs to integration and partial acquisition probability. The costs to integration of capital market in this paper will be proxied by the difference in acquirer industry P/E and target industry P/E as P/E ratio reflects growth opportunities to firm as perceived by the market.

#### 3.2.4. The relationship between private benefits of control and acquisitions method

To investigate the relationship between private benefits of control and acquisitions method, a logistic model in Equation (1) is employed. The dependent variable of interest is PF, which is the deal-specific decision on making partial acquisitions versus full acquisitions.

$$PF_i = B_0 + B_1DZ_i + B_2tPE_i + B_3aPE_i + B_4tPE_iaPE_i + B_5dPE_i + B_6T\_List_i + B_7A\_List_i + B_8Vol_i + B_9Size_i + \varepsilon_i \quad (1)$$

---

where  $i$  denotes deal

$PF_i$ : equals one if the deal  $i$  is a partial acquisition and zero if a full acquisition

$DZ_i$ : reported Controlling Block Transfer Premium (Dyck & Zingales, 2004) for country of deal  $i$

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$tPE_i$ : target's industry PE ratio for deal $i$
$aPE_i$ : acquirer's industry PE ratio for deal $i$
$tPE_i aPE_i$ : an interaction term between acquirer industry PE and target industry PE for deal $i$
$dPE_i$ : difference between acquirer industry PE and target industry PE ratio for deal $i$
$T\_List_i$ : equals one if the target is a listed firm and zero otherwise for deal $i$
$A\_List_i$ : equals one if the acquirer is a listed firm and zero otherwise for deal $i$
$Vol_i$ : the target's stock market volatility for deal $i$
$Size_i$ : the relative size between the acquirer and transaction value of deal $i$
$\varepsilon_i$ : the regression error term

---

The dependent variable  $PF$  represents deal-specific decision dummy which will take value of one if the deal is classified as partial acquisitions and zero if the deal is considered full acquisitions. The nature of this study will be variants of event study focusing on whether the independent variable of interest will affect the likelihood of an event to happen, which in this case is the likelihood (or the odd) of partial acquisition to happen. So, the threshold of 50% ownership is used to classify the acquisition events into partial and full acquisition. One reason why the threshold dummy is used instead of the percentage of ownership is the economics behind each percentage of ownership and the interpretability of the results. For instance, the difference between having 30% of ownership and having 25% ownership might be 5%. However, the difference between having 49% of ownership and having 51% of ownership is not just 2%. In fact, the 50% threshold is used as a boundary for having partial control or full control in the target after the transaction. When the acquirer's ownership in the target exceeds the 50% threshold, that would give the acquirer full control of the target while only partial control is achieved if the ownership does not exceed the threshold. Now that the dependent variable is classified into two groups by the threshold, it becomes dichotomous variable. The Logit regression model is selected since the dependent variable now have logistic distribution instead of normal distribution.

The variable of interest is *DZ*. The independent variable *DZ* represents the controlling block transfer premium reported in Dyck and Zingales (2004) which works as a proxy for private benefits of control at country-level. Assumptions are to be hold that the proxy for private benefits of control is country-specific, and time-invariant (rarely varies across time). The expected coefficient sign is negative (-). Thus, a prediction that given an increase in the *DZ* controlling premium, the odd of the acquirer making partial acquisition should be lower is made.

In results interpretation, one possible argument is that whether the deal is really driven by moral hazard or not. Since theories suggested synergies to be one of the drivers of acquisition activities, acquiring large number of shares in the target or full acquisition might not necessarily driven by moral hazard. In addressing this issue, first the dependent variable here is not just the amount of shares ownership but the partial-/full- acquisition dummy (0 and 1) based on the 50% threshold. The economics behind the zero and one dummy is having partial control versus full control of the target. In full acquisition, the acquirer buying a lot of shares could reflect their pursuit of full control over the target. Moreover, all the control variables in the regression model provided economic (profit-maximizing) reasons for making full acquisition. If the independent variable of interest (block premium) does have a negative significant relationship with the decision on making partial or full acquisition, having controlled for the profit-maximizing variables of making full acquisition, the acquirer's decision to make full acquisition could be imply that the deal is made in pursuit of private benefits or the deal is driven by moral hazard.

### *3.2.5. Listing Status of target firms and the effect of private benefits of control*

The listing status of the target firms is addressed and will be tested to further investigate whether the decision on partial acquisitions or full acquisitions varies between deals involving listed targets and deals involving unlisted targets. Target financing hypothesis (Ouimet, 2013) suggested that targets with negative free cash flow are more likely to be partially acquired. Takeovers are more welcomed in unlisted targets than listed ones as unlisted target have less access to capital market (Officer, 2007). For target financing hypothesis, listing status of the target firm is used as a proxy for exposure to financial distress. However, listing status contains more information content than just ability to raise capital. In acquiring listed targets, acquirers are more exposed to the capital market discipline than the case of unlisted targets. Mandatory deal information disclosure is required to the authorities (e.g., SEC) or the deal advisor. If the deal is debt-financed, disclosure must also be made to the potential creditor as well.

$$PF_i = B_0 + B_1DZ_i + B_2T\_List_iDZ_i + B_3tPE_i + B_4aPE_i + B_5tPE_i aPE_i + B_6dPE_i + B_7T\_List_i + B_8A\_List_i + B_9Vol_i + B_{10}Size_i + \varepsilon_i \quad (2)$$

---

Descriptions:

$T\_List_iDZ_i$ : an interaction term between target listing status and private benefits of control of deal  $i$

In equation (2),  $T\_ListDZ$ , the interaction term between the proxy for private benefits of control,  $DZ$ , and  $T\_List$ , the listing status dummy variable will be added into the regression model to see whether the impact of private benefits of control on the choice of acquisitions mode will be more pronounced for unlisted targets. By this market discipline hypothesis, targets being unlisted could foster the impact of private benefits of control on decision on full or partial acquisition. The expected sign for the interaction

term is positive (+). Acquisitions of listed targets are more exposed to the capital market discipline than that of unlisted targets. Therefore, the effect of private benefits of control on the odd of making partial acquisitions will be more pronounced in unlisted targets (less pronounced in listed targets).

### 3.2.6. Listing status of the acquirers and the effects of private benefits of control

Further test will be conducted to investigate whether the results would differ between acquirers listed on Stock Exchange and unlisted acquirers. As proposed theories suggest, as long as they do not own 100% of the claims, there will always be extraction of corporate resources by managers or shareholders (Jensen & Meckling, 1976). One way of mitigating this agent-principal problem is to create convergence of interest between shareholders and managers. Correspondingly, Morck et al. (1988) suggested lower extraction of corporate resources as managerial ownership increases (i.e. managers having more claims in the company). However, unlisted firm typically are more likely to be run by owner-managers or in some cases family-owned companies are run by insiders (often family members), not outsider managers. Accordingly, Moral Hazard is expected to be less in unlisted acquirers than listed acquirers.

$$PF_i = B_0 + B_1DZ_i + B_2A\_List_iDZ_i + B_3tPE_i + B_4aPE_i + B_5tPE_i aPE_i + B_6dPE_i + B_7T\_List_i + B_8A\_List_i + B_9Vol_i + B_{10}Size_i + \varepsilon_i \quad (3)$$

---

Descriptions:

$A\_List_iDZ_i$ : interaction term between acquirer listing status and private benefits of control for deal  $i$

The test will include both deals involving public and private targets. For equation (3),  $A\_ListDZ$ , an interaction term between proxy for private benefits of

control and *A\_List*, dummy for acquirers listing status is included into the regression model to investigate whether the results would also vary between deals involving listed acquirers and deals involving unlisted acquirers. The expected sign for the interaction term is negative (-). The effect of private benefits of control on the odd of making partial acquisition is predicted to be more pronounced in listed acquirers (less pronounced in unlisted acquirers). Simply, Moral Hazard is expected to be higher in listed acquirers than in unlisted acquirers.

### 3.2.7. The Effects of Private Benefits of Control in Deals Involving Unlisted Acquirers and Unlisted Targets

$$PF_i = B_0 + B_1DZ_i + B_2T\_List_iDZ_i + B_3A\_List_iDZ_i + B_4tPE_i + B_5aPE_i + B_6tPE_i aPE_i + B_7dPE_i + B_8T\_List_i + B_9A\_List_i + B_{10}Vol_i + B_{11}Size_i + \varepsilon_i \quad (4)$$

Since 80% of the world's M&As are populated with deals involving unlisted firms (Draper & Paudyal, 2006; Moeller et al., 2004), a substantial amount of deals in the sample will involve unlisted acquirers acquiring unlisted targets. In equation (4), both the interaction term between acquirer listing status and block premium and the interaction term between the target listing status and the block premium are included in the same test. Since the expected relationship for both interaction terms are of opposite direction (positive for listed targets and negative for listed acquirers), including both interaction term in the same regression equation would indicate whether target or acquirer's listing status would have more influences on the effect of block premium on the dependent variable.



### 3.2.7 The Effects of Private Benefits of Control in Cross-Border Acquisitions

$$PF_i = B_0 + B_1DZ_i + B_2Cros_iDZ_i + B_3tPE_i + B_4aPE_i + B_5tPE_i aPE_i + B_6dPE_i + B_7T\_List_i + B_8A\_List_i + B_9T\_List_iDZ_i + B_{10}A\_List_iDZ_i + B_{11}Vol_i + B_{12}Size_i + B_{13}Cros_i + \varepsilon_i \quad (5)$$

---

Descriptions:

*Cros<sub>i</sub>* : equals one if the deal *i* is a cross-border acquisition and zero if a domestic acquisition

*Cros<sub>i</sub>DZ<sub>i</sub>* : an interaction term between cross-border acquisition dummy and controlling block premium

Among the 0.585 million transactions in the sample, substantial amount will include cross-border acquisition. Two more control variables will be added into the regression equation which are *Cros*, the dummy variable indicating whether the deal is cross-border transaction and *CrosDZ*, an interaction term between cross-border acquisition dummy and the controlling block premium. In some countries, there are regulations limiting the foreign ownership over domestic assets or equities which could make the transaction automatically a partial acquisition. Also, different countries have different institutional environment. Different country has different law (even different legal origin) which could lead to different level of investor protection. Investor protection theory suggests that in a country with bad investor protection environment, private benefits of control would be higher. When private benefits of control are high, extraction of corporate resources by entrenched party would be more severe. There are supporting evidence by Dyck and Zingales (2004) and Porta et al. (1998) that in a country where investor protection is bad, more concentrated stock, or block ownership would be more prevalent. Apart from investor protection theory, there are several literatures that shed light upon the area of cross-border acquisitions. Some of which

view cross-border acquisition as one of the entry modes into the target country market. Theory suggests that corporate governance is one of the main drivers of cross-border acquisitions.

Rossi and Volpin (2004) and Erel et al. (2012) argue that firms in a country with lower level of investor protection are more likely to be a takeover target by an acquirer from a country with better level of investor protection. Possibly, it is relatively easy for firms from a country with good investor protection to extract private benefits of control by acquiring a firm in a country with poor investor protection. The difference in corporate governance or level of private benefits of control between the acquirer and target countries could facilitates resource extraction by the entrenched party (acquirer). Thus, the expected sign on the interaction term is negative (-).

### 3.3. Robustness check

#### 3.3.1 Relative Size

Relative size used as control variable is calculated by the transaction value (\$mil) divided by acquirer's total assets (\$mil). However, for robustness check, another way of calculating relative size is introduced because deal value might not really capture the size of the targets. One acquirer could be paying the same amount in acquiring two different targets and these two targets could differ greatly in their sizes. The acquirer could be paying high for a small target or paying low for a big target. Relative size will now be calculated as the target's total assets (\$mil) divided by the acquirer's total assets (\$mil). The data for target's total assets as a proxy for target size and acquirer's total assets as a proxy for acquirer size are also collected from the SDC database.

### 3.3.2. Antidirector rights index

For robustness check, an alternative interpretation of private benefit of control to be considered is investor protection. Private benefits of control can also be explained by investor protection (La Porta et al., 2000; Porta et al., 1998). In good investor protection environment, the best entrenched managers or controlling shareholders can do is overpaying themselves or pursuing non-value maximizing projects. As shareholders and creditors are better protected by law, they will be more willing to make value-creating investment without being exposed to extraction of corporate resources by controlling shareholders, resulting in more access to external finance by companies.

$$PF_i = B_0 + B_1LP_i + B_2tPE_i + B_3aPE_i + B_4tPE_i aPE_i + B_5dPE_i + B_6T\_List_i + B_7A\_List_i + B_8T\_List_i LP_i + B_9A\_List_i LP_i + B_{10}Vol_i + B_{11}Size_i + \varepsilon_i \quad (6)$$

---

Descriptions:

$LP_i$ : antidirector rights index reported by Porta et al. (1998) for the country of deal  $i$

The alternative proxy for private benefits of control will be included in equation (6) as variable  $LP$  representing the “Antidirector Rights index” pioneered by Porta et al. (1998) as a measure of investor protection or how well the corporate law protects minority investors. The computation of the index itself consists of six elements examining whether a country exhibits the followings: (1) allowing proxy vote, (2) do not require deposition of share before and after the vote, (3) absence of shareholder’s preemptive right, (4) minimum shares ownership that allows minority shareholder to call for extraordinary meeting not exceeding 10%, (5) allowing cumulative voting of

minority shareholders, (6) presence of oppressed minority mechanisms. The computed and reported indices by Porta et al. (1998) can readily be included as independent variable. The indices themselves are country-specific. The expected sign for the interaction term is positive (+). Higher Antidirector rights index implies that country has higher level of investor protection. Better investor protection implies lower private benefits of control. Thus, a prediction that the odd of the acquirer making partial acquisitions should be higher given higher Antidirector rights index.

### 3.3.3. Formalism index

Another proxy to be used for measurement of minority investor protection is the “Formalism index” invented by Djankov et al. (2003). Formalism indicates the efficiency and the speed of courts in resolving everyday simple disputes such as eviction of non-paying tenant and collecting a bounced check. The elements of courts considered in construction of the Formalism index are the following sub-indices: (1) professionals versus laymen, (2) written versus oral, (3) legal justification, (4) statutory regulation of evidence, (5) control of superior review, (6) engagement formalities, and (7) independent procedural actions. These indices are computed by collecting questionnaire answered by attorneys at the associations of law firms from 109 countries around the world. Higher formalism is positively correlated with longer duration of resolution to disputes, implying lower quality of justice and bringing about costs and delays (Djankov et al., 2003). With higher formalism, parties to the dispute might resort to third party instead since courts are not perceived as optimal for resolving conflict. Both Antidirector rights index and the Formalism index have similar feature, they both differ across countries with different legal origin. Contrastingly, the Antidirector rights

indices are higher in common law countries, while the formalism indices are lower for common law countries.

$$PF_i = B_0 + B_1FL_i + B_2tPE_i + B_3aPE_i + B_4tPE_iaPE_i + B_5dPE_i + B_6T\_List_i + B_7A\_List_i + B_8T\_List_iFL_i + B_9A\_List_iFL_i + B_{10}Vol_i + B_{11}Size_i + \varepsilon_i \quad (7)$$

---

Descriptions:

*FL<sub>i</sub>*: Formalism index reported by Djankov et al. (2003) for the country of deal *i*

In equation (7), the independent variable of interest *FL*, representing the Formalism index will be added to the regression, replacing the Antidirector rights index. The Formalism indices are computed and readily reported in Djankov et al. (2003). With higher formalism, courts will not be deemed as effective place to resolve investor's disputes. The expected sign for the Formalism index would be negative (-). The higher the Formalism index, the worse quality of justice, thus the lower level of investor protection. Full acquisitions are expected to be more likely in countries with high formalism index or when there is an increase in the Formalism index, the odd of making partial acquisitions should be lower.

#### 3.3.4. Anti-self-dealing index

Another investor protection measurement proposed by Djankov et al. (2008) is the "Anti-Self-Dealing index". Similar to Porta et al. (1998), the Anti-Self-Dealing index concentrated on how well minority shareholders are "legally" protected from expropriation by controlling shareholders. However, the focus of Djankov et al. (2008) is on self-dealing or self-serving transaction where one shareholder holds share (or controls) in both side of the buyer-seller relationship. The components in construction

of the index include disclosure, approval, and litigation in self-dealing transaction. The index is computed from the ex-ante sub-indices of private control of self-dealing (considering disclosures by buyer, disclosures by shareholders, independent review and approval by disinterested shareholders) and ex-post sub-indices of private control of self-dealing (considering disclosure in periodic filings, shareholder's ability to sue, rescission of the transaction, ease of holding shareholder liable of the loss, ease of holding the approving body liable of the loss, and access to evidence).

$$PF_i = B_0 + B_1DK_i + B_2tPE_i + B_3aPE_i + B_4tPE_i aPE_i + B_5dPE_i + B_6T\_List_i + B_7A\_List_i + B_8T\_List_i DK_i + B_9A\_List_i DK_i + B_{10}Vol_i + B_{11}Size_i + \varepsilon_i \quad (8)$$

---

Descriptions:

$DK_i$ : reported Anti-Self-Dealing index (Djankov et al., 2008) for the country of deal  $i$

Like the Antidirector rights index (Porta et al., 1998), and the Formalism index (Djankov et al., 2003), the differences in the Anti-Self-Dealing indices of each country are also explained by the country's legal origin. In equation (8), replacing the Formalism index,  $DK$  which is the reported Anti-Self-Dealing index for each country will be included. In accordance with the Antidirector rights index, the sign of the interaction term is also expected to be positive (+). The country with higher anti-self-dealing index is expected to have better protection of minority shareholders and thus implies lower private benefits of control. Therefore, the odd of making partial acquisitions should be higher given higher Anti-Self-Dealing index.

### 3.3.5. The World Governance Indicator

The previous three measurement of investor protection share similar features, they are explained by the legal origin transplanted into the country whether voluntarily, or through colonization. Key features of these legal origins remain observable despite having transplanted since the colonial ages, implying that key features of each legal origin may persist for a very long period of time (Porta et al., 1998). However, Kaufmann et al. (2009) empirical work raises another point of view that governance does, in fact, changes over time. This paper has no intention of having a say in whether which measurements or theoretical concepts are correct, or better than one another. Rather, for robustness check of the main hypothesis, several indices or indicators will be considered. In Kaufmann et al. (2009), they presented a series of work on measurement indicator of governance called “World Governance Indicator” (WGI) research project. This indicator was also presented in their prior series of WGI research project for year 1996, 1998, 2000, and 2002-2008 annually. Six dimensions of governance are covered in WGI which are: (1) Voice and Accountability, (2) Political Stability and Absence of Violence, (3) Government Effectiveness, (4) Regulatory Quality, (5) Rule of Law, and (6) Control of Corruption. These indicators are created by aggregating data on each dimension of governance collected from 35 data providers around the world. However, not all six dimensions of indicators will be used in the test. Voice and Accountability is mainly about the citizens being able to select their government and covers freedom of expression in term of speech and media. Political Stability and Absence of Violence will also be excluded since it captures how hard can the government be overthrown by violent means. The two indicators will be excluded as it does not speak much about corporate governance or investor protection.

$$PF_i = B_0 + B_1GE_i + B_2tPE_i + B_3aPE_i + B_4tPE_iaPE_i + B_5dPE_i + B_6T\_List_i + B_7A\_List_i + B_8T\_List_iGE_i + B_9A\_List_iGE_i + B_{10}Vol_i + B_{11}Size_i + \varepsilon_i \quad (9)$$

---

Descriptions:

*GE<sub>i</sub>*: Government Effectiveness indicator for the country of deal *i*

*RQ<sub>i</sub>*: Regulatory Quality indicator for the country of deal *i*

*RL<sub>i</sub>*: Rule of Law indicator for the country of deal *i*

*CC<sub>i</sub>*: Control of Corruption indicator for the country of deal *i*

In equation (9), four new independent variables to be included in the regression model which are *GE*, *RQ*, *RL*, and *CC* (descriptions are provided above) are introduced. These four indicators reflect the public perceptions on government and legal body. Higher indicators imply how citizens (including investors) can rely on the authorities and legal mechanisms in protecting themselves from oppression and extraction from the bigger power. However, these four indicators are likely to be correlated with each other. For example, higher Government Effectiveness indicator could also imply better regulatory quality and better control of corruption. To address this issue, four separate tests will be conducted. In the first test, the independent variable of interest in equation (9) will be Government Effectiveness (*GE*). Then in the following tests, *GE* will be replaced with *RQ*, *RL*, and *CC*, respectively one indicator at a time. The four indicators imply better quality of governance. The expected signs for all four variables are positive (+). Under better governance, extraction of corporate resources is expected to be less severe, thus positive relation between the four indicators and the odd of making partial acquisition is expected.

## 4. Empirical Results

### 4.1 Effect of private benefits of control



**Table 4: Descriptive Statistics of Continuous Control Variables**

DZ or the controlling block premium is computed and reported in Dyck and Zingales (2004). The computation for DZ is the difference between price per share paid for the transfer of controlling block premium the trading price on the Exchange two days after announcement divided by trading price on the Exchange two days after announcement. Target and acquirer's industry PE ratios are collected from Datastream. The PE used is the PE observed 22 trading days prior to the deal announcement. Volatility is the standard deviation of the Total Return Index of the target's industries which are retrieved from Datastream calculated as last six months value ending at 22 trading days prior to the deal announcement. Relative Size (1) is computed as the transaction value divided by the acquirer's common equity value, while Relative Size (2) is computed as the target's total assets divided by the acquirer's total assets and Relative Size (3) is computed as the transaction value divided by the target's total assets.

<i>VARIABLES</i>	(1) <i>N</i>	(2) <i>Mean</i>	(3) <i>S.D.</i>	(4) <i>Median</i>
DZ	585,545	0.048	0.109	0.01
Target industry PE	585,545	1,800	1.342e+06	19.80
Acquirer industry PE	585,545	44.72	14,065	18.60
Volatility	585,545	1.504	29.363	0.012
Relative Size (1)	107,598	9.760	1,185	0.114
Relative Size (2)	37,781	4.380	241.592	0.108
Relative Size (3)	57,769	4.665	179.169	0.459

DZ is presented in fraction format, so 1 unit of DZ is equivalent to 100 percentage points. The mean for DZ is 4.8 percent with the median of 1.0 percent and the standard deviation of 10.9. Except for DZ, to control for the effects of outliers and extreme values, control variables listed in this table are winsorized at 95 percentile and are natural-log-transformed.

Table 4 shows the distributions of the predictor variable of interest and other continuous control variables. Some adjustments are done with some continuous variables which are the Target Industry PE, Acquirer Industry PE, Difference in PE and Relative Size. To control the effects of outliers or variables with extreme values, these four control variables are winsorized at 95 percentiles. Control variables Target's industry PE, Acquirer's industry PE, Target Stock Return Volatility, and Relative Size all have right-skewed distributions, so these explanatory variables are natural-log-transformed.

Moreover, since the sample size includes over 0.585 million transactions, there is a substantial number of acquirers who make multiple acquisitions during the studying period of 30 years. To control for heteroscedasticity, all regression analysis is tested

with clustered robust standard error using the identification variables created for each acquirer as the clustered variable. For control variable Relative Size, across all M&A transactions retrieved from the SDC database, not all transactions have their deal value disclosed. The regression analysis will be conducted on two sets of samples. The full sample includes all transactions whether they have deal value reported or not, thus Relative Size (as deal value is needed for relative size calculation) will not be controlled in the full sample. Another sample includes only deals that have their deal value reported and control variable Relative Size will be controlled, though the number of observations is reduced. All regression analyses will have year fixed-effects and country-fixed effects controlled, but their coefficients will not be reported.

Summary of the relationships (the signs) on each of the coefficients on the control variables are shown in table 5 (below). The table illustrates that all variables of interest associated with governance, investor protection, and private benefits of control (*DZ*, *LP*, *FL*, *DK*, and *WGIs*) show the opposite direction (opposite signs on the coefficients) of relationship to what were predicted. In the next section, the univariate and multivariate analysis results are provided.

**Table 5:** Summary of the coefficients on control variables

<i>Variables</i>	<i>Expected Sign</i>	<i>Empirical Results</i>
Controlling Block Premium	Negative	Positive
Target Industry PE ratio	Negative	Negative
Acquirer Industry PE ratio	Negative	Negative
Target Industry Stock Return Volatility	Positive	Positive
Difference in PE ratio	Positive	Positive
Relative Size	Positive	Negative
Target Listing Status	Positive	Positive
Acquirer Listing Status	Positive	Negative
Cross-border Acquisition dummy	Positive	Positive
Antidirector rights index	Positive	Negative

Formalism index	Negative	Positive
Anti-self-dealing index	Positive	Negative
Government Effectiveness	Positive	Negative
Regulatory Quality	Positive	Negative
Rule of Law	Positive	Negative
Control of Corruption	Positive	Negative

#### 4.1.1 Baseline Analysis

Table 6 (below) reports the logistic regression results of the control variables on the dependent variable PF. In model (1), the coefficient on *DZ* is equal to 6.903 which can be translated into the odd ratio of 995.256. Since the controlling block premium is in fraction format, a unit increase would be equivalent to 100 percentage point increase which is a huge increase and rarely

**Table 6:** Logit regression results on each of the control variables

The sample consists of 585,545 mergers and acquisitions transactions in 39 countries. Transactions in the sample are restricted only to the deal status of “completed” and “unconditional”. The sample period is from 1990 to 2021. Dependent variable PF is a dummy variable taking a value of one if the deal is partial acquisition and taking value of zero if the deal is full acquisition. The variable of interest is the controlling block premium or *DZ*. Control variables target industry PE, acquirer industry PE, the difference in target and acquirer’s PE, and target stock return volatility are winsorized at 95 percentile and are natural-log-transformed. Year fixed-effects and country fixed-effects are controlled, but their coefficients are not reported. Also, the regression analysis is run with clustered robust standard error. Model (1) examines the effect of private benefits of control alone on the dependent variable, while in model (2) to model (8), other predictor variables are added into the model one at a time to see if the impact of private benefits of control would vary with more predictor variables controlled.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF	(5) PF	(6) PF	(7) PF	(8) PF	(9) PF
<i>DZ</i>	6.903*** (0.660)	6.833*** (0.696)	6.439*** (0.742)	6.673*** (0.749)	6.285*** (0.753)	6.008*** (0.737)	7.745*** (0.593)	7.650*** (0.600)	
<i>LNtPE</i>		-0.047 (0.042)	0.272*** (0.030)	1.622*** (0.109)	- (0.155)	- (0.130)	- (0.113)	- (0.112)	- (0.112)
<i>LNaPE</i>			- (0.619*** (0.085)	0.877*** (0.118)	- (1.205*** (0.170)	- (1.081*** (0.145)	- (0.971*** (0.119)	- (0.962*** (0.113)	- (0.962*** (0.113)
<i>tPEaPE</i>				- (0.483*** (0.044)	0.255*** (0.057)	0.216*** (0.047)	0.212*** (0.038)	0.215*** (0.037)	0.215*** (0.037)
<i>LNdPE</i>					0.363*** (0.057)	0.356*** (0.047)	0.313*** (0.038)	0.306*** (0.037)	0.306*** (0.037)

					(0.013)	(0.012)	(0.010)	(0.008)	(0.008)
LNVol						0.148***	0.082***	0.084***	0.084***
						(0.042)	(0.019)	(0.019)	(0.019)
T_List							2.864***	2.869***	2.869***
							(0.081)	(0.082)	(0.082)
A_List								-	-
								0.204***	0.204***
								(0.070)	(0.070)
Constant	-	-	-	-	0.644	0.999*	-0.520	-0.417	1.648***
	2.489***	2.363***	1.612***	5.691***					
	(0.216)	(0.293)	(0.401)	(0.345)	(0.508)	(0.564)	(0.398)	(0.406)	(0.362)
Observations	585,545	585,545	585,545	585,545	585,545	585,545	585,545	585,545	585,545

Robust standard errors in parentheses

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

happens. To interpret, instead of a unit increase, a 0.01 unit increase or a percentage point (which is equal to the median or 10 percent of the standard deviation) increase in private benefits of control as proxied by the controlling block premium (DZ) is associated with 7.14 percent increase in the odd of making partial acquisition. In term of probability, a percentage point increase in DZ increases the probability of making partial acquisition by 0.59 percent. The result is in contrast to what was predicted. Negative relationship was predicted as theory suggested that higher block premium which is a proxy for private benefits of control could result in higher likelihood of the acquirer making full acquisitions. However, the result shows a positive significant relationship between the block premium and the likelihood of making partial acquisitions. As other control variables are added into the regression analysis, the coefficient on the DZ still remains positive and statistically significant across all models. Since the other control variables are the known determinants of the decision to make partial or full acquisition, it is arguable that the controlling block premium (DZ) might have captured the effects or the information that were already conveyed by the other known determinants (in other word, overlapping). But the results from Table 6

shows that with more and more control variables included one by one, the coefficient on DZ varies within a small range of 6 to 7.6 which implies the DZ does explain the effects that have not been captured by other known determinants. To provide more support for this argument, model (9) is run with all other known determinants, but DZ is excluded from the model. The results from model (9) shows that with DZ excluded, the coefficients on all other control variables remain unchanged. And for other control variables, the results are consistent with the prediction and will be evaluated in the next section where new control variable is controlled and there is a change in the sample size.

#### 4.1.2 Logit Regression Analysis Result with Reduced Sample Size

**Table 7: Logit Regression Results with Relative Size Added**

In this table, new variable is included which is relative size. Relative size is computed by the transaction value divided by the acquirer's common equity value. To control the effect of outliers and extreme value, relative size is also winsorized at 95 percentile and natural-log-transformed as it is right-skewed distributed. This test is also run with clustered robust standard error. Year fixed-effects and country fixed-effects are controlled with unreported coefficients. Due to data availability issues, not all transactions have the deal value reported in the SDC, so with relative size controlled, the sample size is reduced to 107,598 transactions. Model (1) is run with the full sample size, while model (2) is run with reduced sample size (with relative size controlled). The logistic regression results for model (1) with reduced sample size but without relative size controlled are also reported in the appendix (see Appendix D and E).

VARIABLES	(1) PF	(2) PF
DZ	7.650*** (0.600)	8.178*** (0.583)
LNtPE	-0.641*** (0.112)	-0.126 (0.167)
LNaPE	-0.962*** (0.113)	-0.254 (0.169)
tPEaPE	0.215*** (0.037)	0.049 (0.055)
LNdPE	0.306*** (0.008)	0.154*** (0.012)
LNVol	0.084*** (0.019)	0.036 (0.023)
T_List	2.869*** (0.082)	2.218*** (0.030)
A_List	-0.204***	-0.411***

LNSize1	(0.070)	(0.058)
Constant	-0.417 (0.406)	-0.305*** (0.007)
Observations	585,545	107,598
Pseudo R2	0.303	0.284

Robust standard errors in parentheses

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

Having controlled the other determinants (the profit-maximizing reasons to make partial/full acquisitions), the results illustrated in Table 7 confirms the result from the baseline analysis. In model (1), the full sample (relative size not controlled), the controlling block premium still shows a positive significant relationship with the likelihood of making partial acquisitions. The coefficient on DZ is 7.650 which produces an odd ratio of 2,100.645. Again, instead of a unit increase, the interpretation would be that, 0.01 unit or a percentage point increase in the controlling block premium leads to a ceteris paribus increase in the odd of the acquirer making partial acquisitions by around 7.94 percent or 0.51 percent increase in the probability of making partial acquisition. The result is similar in model (2) where the coefficient on DZ is also positively significant.

There are some possible explanations to the results being opposite to the prediction. One is that the decision to make partial or full acquisition is not really driven by private benefits of control. Theory suggested full acquisition to be more value-destroying for shareholders but controlling for the economic reasons for making full acquisition, the increase in private benefits of control increase the likelihood of making partial acquisition which is less value-destroying. Another plausible explanation is that partial acquisition could be an initial stage of the acquirer's entire investment program.

Similar to the case of target's stock return volatility, a higher degree of private benefits of control in the target's country could mean a large degree of uncertainty about the target's true value facing the acquirer. To limit the exposure to the potential value loss due to extraction of corporate resources, the acquirer could make partial acquisition to have prior partial ownership (or toehold) to gain more information or assessment on the target's valuation. There is a supporting evidence by Akhigbe et al. (2007) that partially acquired targets are more likely to be subsequently fully acquired. Moreover, the transactions included in the sample are only restricted to those where the acquirer have less than 5 percent ownership (in which in almost all transactions, the acquirers have zero percent prior ownership) prior to the deal and have more than 5 percent ownership after the deal (which is the threshold for having control in the target). So, all the transactions in the sample represent initial investment or first-time acquisition (in other word, no toehold). The fact that toeholds are excluded could support the argument that partial acquisition is one way the acquirer uses as an initial stage market entry. Still, the conclusion cannot be made just yet as there are still some subsamples and other predictor variables to be used for robustness check which could change the result of this research paper.

For other control variables, the results from the full sample size and reduced sample size confirm the result from the baseline analysis. Target's industry PE ratio and acquirer's industry PE ratio both show a negative significant relationship to the dependent variable. The results are in accord with the prediction made that high growth acquirer, in pursuit of growth opportunities, will be willing to make full acquisitions to gain full control over high growth target. While high growth target might be reluctant to sell out their growth opportunities resulting in higher likelihood of the acquirer

making partial acquisitions. The impact of target's industry PE ratio is predicted to vary with the acquirer's industry PE ratio and vice versa, and the interaction term of the two variables shows a positive significant relationship. These findings are consistent with the finding by Ouimet (2013), though instead of using the PE ratio, in her empirical work, the number of patents as control variables.

The control variable difference in PE ( $LNdPE$ ) shows a positive significant relationship with the dependent variable. The results confirm the integration of internal capital market hypothesis where the higher the difference between the target and acquirer's growth opportunities are high, integration of internal capital market will be costly, so acquirer might decide to make partial acquisitions. Target volatility (proxied by the target's industry stock return volatility) also shows a positive significant relationship which is consistent with the prediction, confirming the target valuation hypothesis. For target financing hypothesis, target listing status shows a positive significant relationship with the dependent variable which is consistent with what was predicted. Partial acquisitions could be one effective way of directly financing the financial constrained target (proxied by listing status). For acquirer listing status, the results are in accordance with the prediction that partial acquisitions could be a result of financial constrained acquirer being unable to afford full acquisitions which is confirmed by the negative significant relationship between acquirer listing status and the dependent variable. The negative coefficients on the acquirer listing status dummies can be interpreted as the odd of making partial acquisition is lower when the acquirer is a listed firm.

In model (2) the control variable relative size (deal value divided by the acquirer's common equity value) is included and it shows a negative significant



relationship with the dependent variable. The result is in conflict with acquirer's financial constraints hypothesis that given higher transaction value, the lower odd of making partial acquisition. However, the negative coefficient on relative size (LNSize1) confirms the finding by Ouimet (2013) that relatively larger acquirer are more likely to make partial acquisition. With the reduced sample size and with relative size being controlled, there are changes in the effects of some control variables on the dependent variable. The coefficient sign on target's industry PE loses its statistical significance. For acquirer's industry PE and the interaction term between target and acquirer's industry PE, the directions of the relationship (the sign of the coefficients) remain unchanged but lose their statistical significance.

#### 4.2 Target Listing Status

As mentioned in the methodology section, a subsample of listed versus unlisted targets is considered to examine whether the impact of private benefits of control would differ across listed or unlisted target.

**Table 8:** Number of Full and Partial Acquisitions associated with Listed and Unlisted Targets

<i>Deals</i>	<i>Unlisted Targets</i>	<i>Listed Target</i>	<i>Total</i>
<b>Full Acquisitions</b>	498,956	23,321	522,277
<b>Partial Acquisitions</b>	33,297	29,971	63,268
<b>Total</b>	532,253	53,292	585,545

Table 8 illustrated the distribution of partial versus full acquisitions among listed and unlisted targets. Transactions associated with unlisted target account up to 91 percent of the sample size. Out of the full sample size, partial acquisitions account up

to only 10.8 percent. But in the population of deals involving only listed target, about 56.24 percent is partial acquisitions. Thus, from the sample distributions, partial acquisitions are clearly more prevalent among listed targets, which is why this area needs to be explored.

**Table 9: The Effects of Private Benefits of Control and Listing Status of Targets and Acquirers**

This table reports the logistic regression analysis results considering the subsamples of transactions involving publicly listed targets and publicly listed acquirers. Year fixed-effects and country fixed-effects are controlled but the coefficients are not reported. The test is run with clustered robust standard error. Control variables target's industry PE, acquirer's industry PE, difference in target and acquirer's industry PE, volatility, and relative size are natural-log-transformed. Model (1) and model (2) examine the impact of private benefits of control and listing status of the targets with full and reduced sample size. Model (3) and model (4) consider listing status of the acquirer. Regression results with reduced sample size without relative size controlled are also reported in the appendix (see Appendix D and E).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
DZ	7.848*** (0.576)	8.130*** (0.590)	7.562*** (0.613)	7.846*** (0.652)
LNtPE	-0.643*** (0.111)	-0.126 (0.167)	-0.640*** (0.111)	-0.126 (0.167)
LNaPE	-0.961*** (0.111)	-0.253 (0.170)	-0.962*** (0.112)	-0.254 (0.169)
tPEaPE	0.215*** (0.037)	0.049 (0.055)	0.215*** (0.037)	0.049 (0.055)
LNdPE	0.306*** (0.008)	0.154*** (0.012)	0.306*** (0.008)	0.154*** (0.012)
LNVol	0.082*** (0.019)	0.036 (0.023)	0.084*** (0.019)	0.036 (0.023)
T_List	2.935*** (0.095)	2.207*** (0.033)	2.869*** (0.083)	2.218*** (0.030)
A_List	-0.206*** (0.071)	-0.410*** (0.058)	-0.222*** (0.079)	-0.444*** (0.067)
T_ListDZ	-1.331*** (0.324)	0.223 (0.242)		
A_ListDZ			0.272 (0.180)	0.364 (0.322)
LNSize1		-0.305*** (0.007)		-0.305*** (0.007)
Constant	-0.448 (0.395)	-2.928*** (0.516)	-0.414 (0.406)	-2.903*** (0.516)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.303	0.284	0.303	0.284

Robust standard errors in parentheses

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

Table 9 reports the logistic regression analysis result regarding the impact of private benefits of control and listing status of the targets and the acquirers. In model (1), the full sample is tested without controlling for relative size. The coefficient on DZ is 7.848 which is still positive, and the effect is statistically significant contrasting with the main hypothesis that higher private benefits of control should result in lower odd of making partial acquisition. However, the coefficient on the interaction term T\_ListDZ turns out to be negative which is -1.331 and is statistically significant. The linear combination test for DZ and T\_ListDZ gives out a coefficient of 6.516 which is statistically significant at 1 percent significance level. The coefficient from the linear combination between DZ and T\_List DZ is lower than the coefficient on DZ alone which implies that the effect of private benefits of control is less pronounced in listed target. An increase in private benefits of control still increases the odd of making partial acquisition. However, given an increase in private benefits of control, the increase the in odd of making partial acquisition is higher when the target firm is an unlisted company. The hypothesis that when the private benefits of control in the environment is high, firms make partial acquisition to gain more assessment of the target's true value also applies here. When the target is a publicly listed company, the target firm is more exposed to the market discipline than when the target is an unlisted firm. Since uncertainty in the target's true value arises from the problem of asymmetric information which is also the root cause of moral hazard problem, listed targets would have more information disclosed to the public than unlisted targets. Asymmetric information problem could be less severe, thus the impact of private benefits of control could be less pronounced. Acquirer could become less cautious when acquiring a publicly listed target, thus the less need or willingness to make partial acquisition as a market entry

before making a full takeover later. From the sample distribution of 0.585 million transactions, 99 percent of the transactions involving unlisted target are the transactions where the acquirer have zero percentage ownership in the target prior to the deal. While for transactions involving listed targets, 94 percent are the transaction where the acquirer have zero percentage of shares ownership in the target and 6 percent of the transaction is where the acquirer have prior ownership in the target (even though below 5 percent which is the threshold for having control in the target). Even though the difference between listed and unlisted target is slight, but the sample distribution shows that most transactions involving unlisted targets are the acquirer's first-time takeover or an initial investment by the acquirer.

For the result in model (2), with relative size being controlled, the coefficient on the interaction term between block premium and target listing status becomes positive but loses its statistical significance. The interaction term in model (2) does not confirm the results from model (1). Plausible explanation could be that the transactions that have the required data (transaction value from SDC and acquirer's common equity value from Datastream) for the computation of variable relative size are mostly involved with listed firms. With relative size included, large number observations that are dropped are transactions involving unlisted firms. Since the sample now consists of mostly listed target, the target's listing status does not show any significant effect on the slope of DZ anymore.

#### *4.3 Acquirer Listing Status*

Having examined the subsample of unlisted targets in the previous section, another subsample to be considered is transactions involving unlisted acquirers. Out of

all transactions in the sample, 64 percent of the transactions are made by unlisted acquirers. While in the subsample of only partial acquisitions, around 69 percent of the acquisitions were made by unlisted acquirers. This section will examine whether the impact of private benefits of control would differ when the acquirers are unlisted companies.

**Table 10: Number of Full and Partial Acquisitions involving Listed and Unlisted Acquirers**

<i>Deals</i>	<i>Unlisted Acquirers</i>	<i>Listed Acquirers</i>	<i>Total</i>
<b>Full Acquisitions</b>	333,627	188,650	522,277
<b>Partial Acquisitions</b>	43,456	19,812	63,268
<b>Total</b>	377,083	208,462	585,545

As illustrated in Table 10, clearly, partial acquisitions are more frequently made by unlisted acquirers. Theory suggested that private benefits of control should be lower in owner-manager firm as managers often own 100 percent of the firm's share (Jensen & Meckling, 1976). According to the prediction that the impact of private benefits of control should be more pronounced in listed acquirer, the results from model (3) and model (4) of Table 9 show a contrasting result. While a negative relationship is predicted, the interaction term of controlling block premium and acquirer listing status shows positive but statistically insignificant relationship with the dependent variable. The coefficient on DZ is 7.562 in model (3) and 7.846 in model (4) while the interaction term A\_ListDZ has a coefficient of 0.272 in model (3) and 0.364 in model (4) (both are statistically insignificant at all confidence levels). The linear combination of DZ and A\_ListDZ gives out a coefficient of 7.834 in model (3) and 8.210 in model (4). The linear combinations in both models are statistically significant at 1 percent confidence

level. Even though the linear combination suggests that the impact of private benefits of control is stronger when the acquirer is a public company, the interaction term  $A\_ListDZ$  is not statistically significant in both models (3) and (4) which implies no significant change in the slope (the impact) of  $DZ$  on the dependent variable. Looking at the sample distribution, for both publicly listed acquirer and unlisted acquirer, almost all transactions are those where the acquirer have zero percentage ownership in the target prior to the deal. Less than one percent are the deals where the acquirer have more than 0 but less than 5 percent prior ownership in the target. The sample distribution implies if the private benefits of control in the environment is high, acquirers are more likely to make partial acquisition to gain more assessment (testing the water) of the target's true value before future further investment in the target regardless of the acquirer's listing status. The agency theory suggests that the firms that are run by owner-manager, which are mostly unlisted firms, should have less moral hazard and should be less entrenched. However, the market discipline argument does not only apply to listed target, but listed acquirer should be more exposed to market discipline when making an acquisition as well. When making an acquisition attempt, there are mandatory disclosure to make to the authorities or the public as well. So, there is no significant difference in the reaction to private benefits of control in the environment between listed and unlisted acquirer. Thus, the insignificant relationship between the interaction term  $A\_ListDZ$  and the dependent variable provides support for this argument.

#### *4.4 Unlisted Target and Unlisted Acquirer*

Now that target and acquirer's listing status has been considered, this section will explore further to examine whether the impact of private benefits of control would differ when both targets and acquirers are unlisted firms.

**Table 11: The Effects of Private Benefits of Control and Listing Status of Targets and Acquirers**

This table reports the logistic regression analysis results considering the subsamples of transactions involving publicly listed targets and publicly listed acquirers. Year fixed-effects and country fixed-effects are controlled but the coefficients are not reported. The test is run with clustered robust standard error. Control variables target's industry PE, acquirer's industry PE, difference in target and acquirer's industry PE, volatility, and relative size are natural-log-transformed. Model (1) and model (2) examine the impact of private benefits of control and listing status of both the targets and the acquirers at the same time with full and reduced sample size. Regression results with reduced sample size without relative size controlled are also reported in the appendix (see Appendix D and E).

VARIABLES	(1) PF	(2) PF
DZ	7.746*** (0.584)	7.800*** (0.658)
LNtPE	-0.643*** (0.111)	-0.126 (0.167)
LNaPE	-0.961*** (0.111)	-0.253 (0.170)
tPEaPE	0.215*** (0.037)	0.049 (0.055)
LNdPE	0.306*** (0.008)	0.154*** (0.012)
LNVol	0.082*** (0.019)	0.036 (0.023)
T_List	2.937*** (0.096)	2.207*** (0.033)
A_List	-0.228*** (0.081)	-0.444*** (0.067)
T_ListDZ	-1.356*** (0.335)	0.221 (0.242)
A_ListDZ	0.326* (0.189)	0.363 (0.324)
LNSize1		-0.305*** (0.007)
Constant	-0.444 (0.395)	-2.898*** (0.517)
Observations	585,545	107,598
Pseudo R2	0.303	0.284

Robust standard errors in parentheses

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

In Table 11, models (1) and (2), both the interaction term between controlling block premium and target listing status and an interaction term between controlling block premium and acquirer listing status are being controlled. With the two interaction terms included, the coefficients on DZ become 7.746 in model (1) and 7.800 in model (2) and both are statistically significant at 1 percent confidence level. For targets, in model (1), the interaction term T\_ListDZ shows a negatively significant relationship on the dependent variable, while in model (2) the relationship between the interaction term and the dependent variable becomes statistically insignificant as relative size is controlled and the sample size is reduced. For acquirers, the interaction terms in both model (1) and model (2) show a positive but insignificant relationship with the dependent variable implying that the slope of DZ is unaffected by public status of the acquirer, which is consistent with models (3) and (4) from Table 9. When considering the deals involving only listed targets and listed acquirer, the linear combination of DZ, T\_ListDZ and A\_ListDZ gives a coefficient of 6.715 or the odd ratio of 824.683 in model (1) and 8.384 or the odd ratio of 4,376 in model (2). Both are statistically significant at 1 percent confidence level. For model (1), a percentage point increase in DZ would increase the odd of making partial acquisition by 6.94 percent. The coefficients from the linear combinations are lower than the coefficients on DZ alone, implying that the effect of private benefits of control is less pronounced in the transactions involving listed targets and listed acquirers. However, the slope of DZ is more likely to be affected by target listing status rather than acquirer listing status as indicated by the insignificance of the coefficient on A\_ListDZ. Similar explanation from section 4.3 also applies here.



#### 4.5 Cross-border Acquisitions

So far, the sample had been focusing on all deals involving both listed and unlisted firms. However, mergers and acquisitions are not only limited within the firm's incorporated country. Substantial number of M&A transactions involve cross-border acquisitions as well.

**Table 12:** *Number of Full and Partial Acquisitions classified into Cross-border Acquisitions and Domestic Acquisitions*

<i>Deals</i>	<i>Domestic Acquisitions</i>	<i>Cross-border Acquisitions</i>	<i>Total</i>
<b>Full Acquisitions</b>	386,827	135,450	522,277
<b>Partial Acquisitions</b>	45,014	18,254	63,268
<b>Total</b>	431,841	153,704	585,545

Table 12 illustrates that 26 percent of the sample are classified by the SDC database as cross-border acquisitions, and around 11.9 percent of these cross-border acquisitions are partial acquisitions. While considering only partial acquisition transactions, 28.85 percent are cross-border transactions.

In table 13 (below), the coefficient on cross-border dummies are all positively significant across all models. In model (1) the coefficient on Cros is 0.099 which equals the odd ratio of 1.104. The interpretation would be that the odd of making partial acquisition is 10.4 percent higher when

**Table 13:** *Multivariate Regression Results with Cross-Border Acquisitions dummy included*

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In this table, control variable Cros which is a dummy variable taking value of one if the deal is a cross-border acquisition and taking value zero if the deal is domestic acquisition is added into the regression equation. CrosDZ, an interaction term

between cross-border acquisition dummy and controlling block premium is also added to see if the deal being cross-border transaction would foster the impact of private benefits of control. In models (1) and (2), only cross-border dummies are included, while in models (3) and (4), both the dummies and their interaction terms with DZ are included. Year fixed-effects and country fixed-effects are controlled, but the coefficients are not reported. This test is also run with clustered robust standard errors. The tests are done in full sample and reduced sample size with relative size controlled. Test results with reduced sample size but relative size not controlled are also reported in the appendix (see Appendix F).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
DZ	7.581*** (0.604)	7.087*** (0.663)	8.037*** (0.625)	8.151*** (0.677)
Cros	0.099** (0.044)	0.322*** (0.036)	0.196*** (0.054)	0.440*** (0.039)
CrosDZ			-1.079*** (0.162)	-1.641*** (0.261)
LNtPE	-0.644*** (0.111)	-0.137 (0.167)	-0.640*** (0.113)	-0.137 (0.167)
LNaPE	-0.967*** (0.111)	-0.273 (0.169)	-0.964*** (0.111)	-0.276 (0.169)
tPEaPE	0.216*** (0.037)	0.053 (0.055)	0.215*** (0.037)	0.053 (0.055)
LNdPE	0.307*** (0.008)	0.157*** (0.012)	0.306*** (0.008)	0.156*** (0.012)
LNVol	0.081*** (0.019)	0.030 (0.023)	0.081*** (0.020)	0.031 (0.023)
T_List	2.936*** (0.097)	2.206*** (0.033)	2.937*** (0.097)	2.206*** (0.033)
A_List	-0.230*** (0.082)	-0.421*** (0.067)	-0.235*** (0.083)	-0.420*** (0.068)
T_ListDZ	-1.333*** (0.346)	0.268 (0.243)	-1.356*** (0.341)	0.269 (0.247)
A_ListDZ	0.296 (0.197)	0.291 (0.325)	0.424** (0.199)	0.347 (0.327)
LNSize1		-0.302*** (0.006)		-0.303*** (0.007)
Constant	-0.455 (0.402)	-2.974*** (0.517)	-0.483 (0.408)	-3.002*** (0.517)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.303	0.286	0.304	0.287

Robust standard errors in parentheses

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

the deal is cross-border acquisition compared to domestic acquisition. The positively significant relationships between the cross-border dummies across all four models confirm the hypothesis that in some countries, regulations limit the percentage of foreign ownership, making the deals automatically partial acquisition. With two new control variables added in models (3) and model (4), the relationship between controlling block premium (DZ) and the odd of making partial acquisitions remains

positively significant. The results are similar for both model (3) and model (4). For example, in model (3) the coefficient on DZ is 8.037 which translates into the odd ratio of 3,093. A 0.01-unit or a percentage point increase in private benefits of control would increase the odd of making partial acquisition by 8.37 percent or 0.54 percent increase in the probability of making partial acquisition. With relative size controlled in model (4), the coefficient on DZ still remains positive which contradicts with the expected coefficient signs. In both models (3) and (4), the interaction term between cross-border dummy and controlling block premium shows a negative significant relationship with the dependent variable which correspond with the prediction. In model (3), the test for linear combination of DZ and CrosDZ gives out a coefficient of 6.957 or the odd ratio of 1,050 which is statistically significant at 1 percent confidence level. A percentage point increase in private benefits of control still increase the odd of making partial acquisition by 7.2 percent in cross-border acquisition. While in model (4), the linear combination gives out a coefficient of 6.510 which is also statistically significant at 1 percent confidence level. In both models, the coefficient from the linear combination is smaller than pure DZ, or rather, the effect of private benefits of control on the dependent variable become less pronounced in cross-border acquisitions. The interaction terms between listing status for both target and acquirer with controlling block premium (T\_ListDZ, and A\_ListDZ) still show similar story to the previous section that target listing status affects the slope of DZ (in full sample size) while acquirer listing status does not have significant effect on the slope of DZ.

#### *4.6 Robustness Check*

##### *4.6.1 Relative Size*

**Table 14: Multivariate Regression Results with two different computations of relative size and Without Relative Size**

Control variable Size1 is computed as the transaction value divided by the acquirer's common equity value. Size2 is computed as the target's total assets divided by the acquirer's total assets. Both control variables are winsorized at 95 percentile and are natural-log-transformed as both predictor variables have right-skewed distribution). The natural-log-transformed Relative Size will be noted as LNSize1 and LNSize2. Year fixed-effects and country fixed-effects are controlled but their coefficients are not reported. The test is run with clustered robust standard errors. Regression results with reduced sample size but relative size not controlled are also reported in the appendix. Also, regression results with Size3 (computed as the transaction value divided by the target's total assets are also reported in the appendix (see Appendix G).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
DZ	7.087*** (0.663)	7.013*** (0.647)	11.659*** (1.851)	11.235*** (1.852)
Cros	0.322*** (0.036)	0.410*** (0.035)	0.245*** (0.046)	0.339*** (0.046)
LNtPE	-0.137 (0.167)	-0.353** (0.161)	-0.658*** (0.242)	-0.674*** (0.242)
LNaPE	-0.273 (0.169)	-0.529*** (0.163)	-0.901*** (0.247)	-0.955*** (0.248)
tPEaPE	0.053 (0.055)	0.127** (0.053)	0.237*** (0.080)	0.247*** (0.081)
LNdPE	0.157*** (0.012)	0.200*** (0.012)	0.317*** (0.017)	0.335*** (0.018)
LNVol	0.030 (0.023)	0.034 (0.021)	0.060** (0.029)	0.062** (0.029)
T_List	2.206*** (0.033)	1.972*** (0.031)	2.460*** (0.057)	2.330*** (0.054)
A_List	-0.421*** (0.067)	-0.402*** (0.063)	-0.085 (0.071)	0.023 (0.070)
T_ListDZ	0.268 (0.243)	0.130 (0.237)	-0.397 (0.338)	-0.505 (0.334)
A_ListDZ	0.291 (0.325)	0.805*** (0.307)	0.205 (0.391)	0.420 (0.388)
LNSize1	-0.302*** (0.006)			
LNSize2			-0.128*** (0.011)	
Constant	-2.974*** (0.517)	-1.316*** (0.498)	-1.984*** (0.729)	-1.525** (0.732)
Observations	107,598	107,598	37,781	37,781
Pseudo R2	0.286	0.237	0.327	0.321

Robust standard errors in parentheses

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

Relative size used as control variable is computed by the acquirer's total assets (\$mil) divided by the deal value (\$mil). However, for robustness check, another way of calculating relative size is introduced. The data for target's total assets and acquirer's

total assets are collected from the SDC database. Relative size will now be calculated as the acquirer's total assets divided by the target's total assets.

Table 14 reports the logit regression results associated with control variable relative size. In model (1), LNSize1 the natural logarithm of the transaction value (\$mil) divided by the acquirer's common equity value (\$mil). In model (2), LNSize2 is the natural logarithm of the target's total assets (\$mil) divided by the acquirer's total assets (\$mil).

The logit regression result shows that both computations of relative size show negatively significant relationship with the dependent variable. The impacts of the controlling block premium on the dependent variable are positively significant across all models. The coefficients on LNSize1 and LNSize2 are negatively significant which are in contrast with the acquirer's financial constraints hypothesis that the larger the transaction value or the larger the target's size, the higher odd of making partial acquisition. However, the results confirm the findings by Ouimet (2013). She proposed the managerial incentive preserving hypothesis where she hypothesized that large acquirers do not want to dilute the target's managers too much that the target lose the managerial incentive to cooperate with the acquirer. Ouimet (2013) further purposed that the dilution to the target's manager will be higher when acquiring relatively small targets because the quality of accounting standard in smaller targets might be lower than that of larger targets and the monetary benefits to the target's managers are often tied to firm size instead of accounting numbers. Thus, the odd of making full acquisition increases as the relative size of the target increase. For example, in model (1) the coefficient on LNSize 1 is -0.302 or the odd ratio of 0.739 which is statistically significant at 1 percent confidence level. A percentage increase in the relative size of

the target would decrease the odd of making partial acquisition by 26 percent. For robustness check, models (2) and (4) are run without the variable relative size (regardless of which computation) but with reduced sample size. The result shows that the impact (the coefficient sign and its significance) of controlling block premium on the dependent variable remain unchanged regardless of the sample size.

#### 4.2.2 Antidirector rights index

The Antidirector rights index (Porta et al., 1998), which is the measure of how well minority investors are protected by the laws, replaces DZ as the predictor variable of interest. Due to data availability issue, transactions in Czech Republic and Poland are not included as the two countries do not have the Antidirector Rights index reported in Porta et al. (1998). The full sample size is reduced down to 578,004 observations.

**Table 15: Logit Regression Result on the effects of the Level of Minority Investor Protection (Antidirector rights index)**

Replacing the controlling block premium, LP or the Antidirector rights index (Porta et al., 1998) is included in the model as the predictor variable of interest to examine the impact of the level of investor protection on the odd of making partial acquisition. The test is run with clustered robust standard errors. Year fixed-effects and country fixed-effects are controlled but their coefficients are not reported. Like the previous test, control variables target and acquirer's industry PE, volatility, difference in target and acquirer's industry PE and relative size are natural-log-transformed. In models (2) and (4), the subsample of cross-border acquisitions is examined by including the interaction term CrosLP. Results with reduced sample size but relative size not controlled are also reported in the appendix (see Appendix H).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
LP	0.157** (0.069)	0.039 (0.073)	-0.082 (0.184)	-0.357* (0.210)
Cros	0.114** (0.044)	-0.725*** (0.055)	0.354*** (0.036)	-1.115*** (0.113)
CrosLP		0.232*** (0.024)		0.376*** (0.028)
LNtPE	-0.651*** (0.112)	-0.642*** (0.115)	-0.139 (0.171)	-0.106 (0.170)
LNaPE	-0.967*** (0.108)	-0.959*** (0.110)	-0.255 (0.173)	-0.221 (0.172)
tPEaPE	0.217*** (0.037)	0.214*** (0.038)	0.048 (0.056)	0.037 (0.056)
LNdPE	0.308*** (0.008)	0.308*** (0.008)	0.156*** (0.012)	0.151*** (0.012)
LNVol	0.077***	0.079***	0.033	0.038*

	(0.019)	(0.019)	(0.023)	(0.023)
T_List	2.665***	2.654***	2.966***	2.864***
	(0.155)	(0.154)	(0.099)	(0.098)
A_List	0.301***	0.391***	-0.617***	-0.592***
	(0.070)	(0.072)	(0.149)	(0.149)
T_ListLP	0.052	0.056	-0.187***	-0.164***
	(0.057)	(0.057)	(0.024)	(0.024)
A_ListLP	-0.136***	-0.157***	0.060	0.059
	(0.031)	(0.033)	(0.040)	(0.040)
LNSize1			-0.303***	-0.306***
			(0.007)	(0.007)
Constant	0.941**	1.341***	-0.722	0.224
	(0.475)	(0.451)	(0.869)	(0.962)
Observations	578,004	578,004	106,643	106,643
Pseudo R2	0.303	0.305	0.289	0.293

Robust standard errors in parentheses

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

Table 15 reports the logit regression results with the variable controlling block premium replaced by LP or the Antidirector rights index (La Porta, 1998). Higher Antidirector rights index reflects higher degree of minority investor protection which could lead to lower degree of private benefits of control. Theory suggested that in bad investor protection environment, having majority control could be one effective protection against the extraction of corporate resources or private benefits of control. So higher Antidirector rights index should be associated with higher odd of the acquirer making partial acquisitions. The result in model (1) is in accordance with the prediction. The sign of the coefficient on LP is positive and statistically significant at 5 percent confidence levels. The coefficient is 0.157 which can be translated into the odd ratio of 1.170 which means a unit increase in the Antidirector rights index will lead to an increase in the odd of making partial acquisition by 17 percent, or 1.03 percent increase in the probability of making partial acquisition. But, in model (3) with reduced sample size, the sign of the coefficient on LP is negative and statistically insignificant which contrasts with the prediction.

Then, considering the subsample of only cross-border acquisitions by including an interaction term between the Antidirector rights index and cross-border acquisition dummy in model (2) and model (4), the results now show another story. While in model (2), the effect of LP on the dependent variable is positively insignificant, and in model (4), the effect of LP is only significant at 10 percent confidence level, the relationship between the interaction term and the dependent variable is positively significant in both models (2) and (4). To interpret model (2), the test for linear combination between LP and the interaction term gives out a coefficient of 0.271 and is statistically significant at all confidence levels. The coefficient translates into the odd ratio of 1.31 which means that in cross-border acquisitions, a unit increase in the Antidirector rights index will increase the odd of making partial acquisition by 31 percent. The linear combination from model (2) supports the hypothesis that better investor protection should increase the odd of making partial acquisition. For model (4), with relative size controlled, the coefficient on LP is -0.357 which is only statistically significant at 10 percent confidence level. The coefficient can be interpreted as a unit increase in LP would decrease the odd of making partial acquisition by 30 percent or decrease the probability of making partial acquisition by 2.53 percent in domestic transactions. The interaction term in model (4) shows a positively significant relationship to the dependent variable. A test for linear combination between LP and the interaction term gives out a coefficient of 0.019 which is statistically insignificant at all confidence levels. This is similar to the case of controlling block premium in cross-border acquisitions where the impact of the governance indicators (block premium and Antidirector rights index) become less pronounced in cross-border acquisitions.



Another notable change occurs is the cross-border dummy variable. With the interaction term CrosLP included, the coefficient on cross-border dummy turns significantly negative. The interpretation of the coefficient on Cros would be that the odd of making partial acquisition is lower in cross-border transactions when DZ is zero. However, the linear combination between Cros and CrosLP in model (2) gives a coefficient of -0.492 or the odd ratio of 0.611 which is statistically significant at all confidence level. At the given the level of Antidirector rights index, the odd of making partial acquisition is 39 percent lower in cross-border acquisitions than in domestic acquisitions. And for model (4), the coefficient on Cros also turns negative and the coefficient from the linear combination of Cros and CrosLP is -0.738 or the odd ratio of 0.478. The interpretation is similar to model (2) that at given the level of Antidirector rights index, the odd of making partial acquisition is 52 percent lower in cross-border transaction compared to domestic acquisitions.

#### 4.2.3 Formalism index

Formalism index (Djankov et al. (2003) includes two subindices which are Formalism index in evicting a tenant (will be further referred to as FL1) and Formalism index in collecting a bounced cheque (will be further referred to as FL2).

**Table 16:** Formalism index and the Effect on the Decision to Make Partial or Full Acquisitions

Predictor variable FL1 denotes Formalism index in evicting a tenant while FL2 denotes Formalism index in collecting a bounced cheque. Control variables target's industry PE, acquirer's industry PE, the difference in target and acquirer's industry PE, volatility and relative size are natural-log-transformed. Year fixed-effects and country fixed-effects are controlled but their coefficients are not reported. The test is run with clustered robust standard errors. The test is done separately for FL1 and FL2, one at a time. Models (1) and (2) examine FL1 while models (3) and (4) examine FL2. Results with reduced sample size but relative size not controlled are also reported in the appendix (see Appendix I).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
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FL1	0.539*** (0.072)	0.897*** (0.187)		
FL2			0.447*** (0.067)	0.796*** (0.166)
Cros	0.086** (0.043)	0.319*** (0.036)	0.097** (0.043)	0.326*** (0.036)
LNtPE	-0.630*** (0.106)	-0.133 (0.167)	-0.640*** (0.111)	-0.141 (0.167)
LNaPE	-0.963*** (0.107)	-0.271 (0.169)	-0.965*** (0.111)	-0.276 (0.169)
tPEaPE	0.212*** (0.035)	0.052 (0.055)	0.215*** (0.037)	0.054 (0.055)
LNdPE	0.305*** (0.007)	0.157*** (0.012)	0.307*** (0.008)	0.157*** (0.012)
LNVol	0.069*** (0.016)	0.027 (0.023)	0.075*** (0.018)	0.031 (0.023)
T_List	3.994*** (0.319)	2.612*** (0.119)	3.306*** (0.181)	2.337*** (0.100)
A_List	-1.091*** (0.231)	0.119 (0.233)	-0.644*** (0.150)	0.195 (0.174)
T_ListFL1	-0.363*** (0.080)	-0.126*** (0.037)		
A_ListFL1	0.271*** (0.055)	-0.152** (0.064)		
T_ListFL2			-0.166*** (0.044)	-0.043 (0.035)
A_ListFL2			0.155*** (0.035)	-0.196*** (0.052)
LNSize1		-0.303*** (0.007)		-0.303*** (0.006)
Constant	-2.027*** (0.469)	-5.695*** (0.774)	-1.558*** (0.467)	-5.085*** (0.686)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.305	0.286	0.303	0.286

Robust standard errors in parentheses

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

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Table 16 reports the logit regression results with the new variable of interest which is the Formalism index (Djankov et al. (2003) denoted as FL1 and FL2. Higher Formalism index indicates the longer time and less efficiency of the law in the process of evicting a non-paying tenant and collecting a bounced cheque. As theory suggested, the worse quality of the law could imply lower level of investor protection, so the prediction was that higher Formalism index should reduce the odd of the acquirer making partial acquisitions. The results in all four models (with or without relative size

controlled) are in contrast with the hypothesis. The Formalism index in every model shows a positively significant relationship with the dependent variable. For example, in model (1), the coefficient on FL1 is 0.539 which equals to the odd ratio of 1.714. Given a unit increase in the Formalism index (in evicting a tenant), the odd of the acquirer making partial acquisition is increased by 71.4 percent which is 3.61 percent increase in probability of making partial acquisition. Also, FL2 in model (3) has a coefficient of 0.447 or the odd ratio of 1.56. A unit increase in the Formalism index (in collecting a bounced cheque) leads to a ceteris paribus increase in the odd of making partial acquisition by 56 percent or 2.99 percent in term of probability. Both relationships mentioned are statistically significant at all significance levels. The interpretations of FL1 and FL2 in all models indicate that the lower quality of the courts (laws), the higher the odd of making partial acquisition which is inconsistent with the prediction.

**Table 17: Formalism index in Cross-border Acquisitions**

In this table, the interaction terms between cross-border acquisition dummy and the two Formalism indices (Djankov et al., 2003) are included. Year fixed-effects and country fixed-effects are controlled (coefficients not reported). The test is run with clustered robust standard errors. Models (1) and (2) report the regression results for FL1 in full sample and reduced sample size while models (3) and (4) report the regression results for FL2 in both sample size. Results for reduced sample size without relative size controlled are reported in the appendix (see Appendix J).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
FL1	0.644*** (0.074)	1.117*** (0.217)		
Cros	0.843*** (0.148)	1.242*** (0.122)	0.413*** (0.086)	0.768*** (0.097)
CrosFL1	-0.228*** (0.034)	-0.293*** (0.038)		
FL2			0.500*** (0.067)	0.919*** (0.185)
CrosFL2			-0.110*** (0.018)	-0.161*** (0.033)
LNtPE	-0.631*** (0.107)	-0.136 (0.167)	-0.642*** (0.111)	-0.147 (0.167)
LNaPE	-0.960*** (0.107)	-0.270 (0.169)	-0.965*** (0.111)	-0.284* (0.169)
tPEaPE	0.212*** (0.035)	0.052 (0.055)	0.215*** (0.037)	0.056 (0.055)

LNdPE	0.304*** (0.008)	0.154*** (0.012)	0.307*** (0.008)	0.156*** (0.012)
LNVol	0.071*** (0.016)	0.027 (0.023)	0.076*** (0.018)	0.031 (0.023)
T_List	4.009*** (0.316)	2.612*** (0.119)	3.333*** (0.173)	2.370*** (0.100)
A_List	-1.148*** (0.247)	0.183 (0.235)	-0.681*** (0.153)	0.222 (0.176)
T_ListFL1	-0.368*** (0.079)	-0.129*** (0.037)		
A_ListFL1	0.291*** (0.059)	-0.166*** (0.064)		
T_ListFL2			-0.176*** (0.042)	-0.056 (0.035)
A_ListFL2			0.170*** (0.035)	-0.200*** (0.052)
LNSize1		-0.303*** (0.007)		-0.303*** (0.006)
Constant	-2.341*** (0.501)	-6.367*** (0.840)	-1.692*** (0.482)	-5.399*** (0.717)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.305	0.287	0.304	0.287

Robust standard errors in parentheses

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

However, when considering the subsample of cross-border acquisitions by including the interaction term between the Formalism index and cross-border acquisition dummy, the result now moves closer to what was predicted. In Table 17, the relationships between the interaction terms and the dependent variables in all four models are negatively significant. In model (1), the linear combination between FL1 and CrosFL1 gives out a coefficient of 0.416 which is statistically significant at 1 percent confidence level. A unit increase in the Formalism index (in evicting a tenant) increases the odd of making partial acquisition by 51.6 percent in cross-border acquisition. The test for linear combination between the Formalism index and the interaction term for model (2), (3), and (4) give out coefficients of 0.823, 0.390, and 0.757, respectively and all are statistically significant at 1 percent confidence level. Given an increase in the Formalism index (both types), the increases in the odd of

making partial acquisition is lower in cross-border acquisitions or the effects of the Formalism index is less pronounced in cross-border acquisitions.

#### 4.2.4 Anti-Self-Dealing index

Now, replacing the Formalism index, the new control variable of interest in included in the model which is the Anti-Self-Dealing index (Djankov et al., 2008). The tests on the Anti-Self-Dealing index in this section will also consider the subsample of cross-border transactions as well.

**Table 18: Anti-Self-Dealing index and the decision to make partial acquisitions**

DK or the Anti-Self-Dealing index (Djankov et al., 2008) replaces the Formalism index as the predictor variable of interest. Control variables target's industry PE, acquirer's industry PE, the difference in target and acquirer's industry PE, volatility, and relative size are natural-log-transformed. Year fixed-effects and country fixed-effects are controlled (coefficients not reported) and the test is run with clustered robust standard errors. Models (1) and (2) report the regression results for both full and reduced sample size with relative size controlled. Models (3) and (4) have the interaction term between the Anti-Self-Dealing index and cross-border dummy included to examine whether the impact of levels of investor protection would be different in cross-border acquisition and domestic acquisition. Results with reduced sample size but without relative size controlled is also reported in the appendix (see Appendix K).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
DK	-2.603*** (0.427)	-4.218*** (0.925)	-3.089*** (0.434)	-5.080*** (1.017)
Cros	0.098** (0.044)	0.326*** (0.036)	-0.535*** (0.043)	-0.396*** (0.096)
CrosDK			1.102*** (0.080)	1.159*** (0.143)
LNtPE	-0.634*** (0.112)	-0.138 (0.167)	-0.630*** (0.114)	-0.134 (0.167)
LNaPE	-0.960*** (0.113)	-0.274 (0.169)	-0.951*** (0.113)	-0.264 (0.169)
tPEaPE	0.213*** (0.037)	0.053 (0.055)	0.211*** (0.038)	0.050 (0.055)
LNdPE	0.307*** (0.008)	0.157*** (0.012)	0.308*** (0.008)	0.155*** (0.012)
LNVol	0.082*** (0.020)	0.031 (0.023)	0.082*** (0.020)	0.031 (0.023)
T_List	2.884*** (0.063)	2.249*** (0.090)	2.884*** (0.067)	2.216*** (0.090)
A_List	0.134* (0.073)	-0.709*** (0.141)	0.199*** (0.064)	-0.718*** (0.141)
T_ListDK	-0.024	-0.047	-0.025	-0.011

	(0.156)	(0.141)	(0.147)	(0.141)
A_ListDK	-0.583***	0.566**	-0.680***	0.611**
	(0.089)	(0.248)	(0.096)	(0.249)
LNSize1		-0.303***		-0.303***
		(0.007)		(0.006)
Constant	1.336***	-0.217	1.629***	0.296
	(0.467)	(0.778)	(0.454)	(0.827)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.303	0.286	0.304	0.287

Robust standard errors in parentheses

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

Table 18 reports the logit regression results on the Anti-Self-Dealing index along with the other control variables. From what suggested by the theory that the Anti-Self-Dealing index indicates the level of investor protection and better investor protection makes the problem of private benefits of control less severe, leads to a prediction that the higher Anti-Self-Dealing index, the higher the odd of the acquirer making partial acquisition. Again, similar to the case of the Antidirector rights index and the Formalism index, inconsistent with the prediction, the coefficient on the Anti-Self-Dealing index shows a negatively significant relationship with the dependent variable which can be interpreted as given one unit increase in the Anti-Self-Dealing index, the odd of the acquirer making partial acquisition is lower. For example, in model (1), the coefficient on DK is -2.603 or the odd ratio of 0.074. The interpretation would be a unit increase in the Anti-Self-Dealing index would decrease the odd of making partial acquisition by 92.6 percent. But the Anti-Self-Dealing index only ranges from zero to one, so a unit increase in the index is very huge and unlikely. Instead, a 0.1-unit increase (which is 50 percent of the standard deviation, see the descriptive statistics in Appendix C) would decrease the odd of making partial acquisition by 23 percent or decrease the probability of making partial acquisition by 1.74 percent.

Then, considering the subsample of cross-border acquisitions by including an interaction term of the Anti-Self-Dealing index and cross-border acquisition dummy, the sign on the interaction term coefficient is opposite to the main effect (DK). The coefficient on the interaction term indicates a positively significant relationship with the dependent variable. In model (3), the linear combination of DZ and CrosDZ gives a coefficient of -1.987 and is statistically significant at 1 percent confidence level. The interpretation is that in cross-border acquisitions, a 0.1-unit (50 percent of the standard deviation) increase in the Anti-Self-Dealing index would decrease the odd of making partial acquisition by 18 percent. Similar to the previous case of the Formalism index, the impact of the level of investor protection (Anti-Self-Dealing index) is less pronounced in cross-border acquisitions.

Like the case for the Antidirector Rights index, when the interaction term of DK and cross-border dummy is included, the coefficient on cross-border dummy turns significantly negative. The interpretation of the coefficients on Cros in both models (3) and (4) are that the odd of making partial acquisition is lower when the level of Anti-Self-Dealing index is zero. And to interpret model (3), the coefficient from the linear combination between Cros and CrosDK is 0.567 or the odd ratio of 1.762. At given a level of the Anti-Self-Dealing index, the odd of making partial acquisition is 76 percent higher in cross-border transactions compared to domestic transactions. While in model (4), the linear combination of Cros and CrosDK gives a coefficient equal to 0.763 or the odd ratio of 2.144. The interpretation is similar to model (3) as at a given level of the Anti-Self-Dealing index, the odd or making partial acquisition is 1.14 times higher in cross-border transactions compared to domestic transactions.

#### 4.2.5 World Governance Indicators

The predictor variable of interest in this robustness test section is the World Governance Indicator (Kaufmann et al., 2009). As stated in the methodology section, only four out of six governance indicators are selected which are Government Effectiveness (denoted as GE), Regulatory Quality (denoted as RQ), Rule of Law (denoted as RL) and Control of Corruptions (denoted as CC). These selected four World Governance Indicators are likely to be highly correlated with each other, four separated tests are conducted.

The regression results from Table 19 (below) show similar stories to the previous tests and robustness tests. Across all models, the coefficients on the Government Effectiveness (GE) and Regulatory Quality (RQ) show negatively significant relationship with the likelihood of making partial acquisition. For example, to interpret model (1), the coefficient on GE is -0.664 which means a unit increase in Government effectiveness level would decrease the odd of making partial acquisition by 48.5 percent or decrease the probability of making partial acquisition by 4.4 percent. Regardless of whether relative size is controlled and the number of observations, the coefficients remain positively significant across all models which is inconsistent with the prediction. The fact

**Table 19:** *Logistic Regression Analysis results for the impact of each World Governance Indicator*

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In this table, two new predictor variables are introduced. Two of the four World Governance Indicators are GE for Government Effectiveness, RQ for Regulatory Quality are controlled. These two variables are tested one at a time with both the full sample size and reduced sample size (relative size controlled). Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. Year fixed-effects and country fixed-effects are controlled (coefficients not reported) and the test is run with clustered robust standard errors. Regression results



for each predictor variable with reduced sample size but without relative size controlled are also reported in the appendix (see Appendix L).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
GE	-0.664*** (0.088)	-0.859*** (0.202)		
RQ			-0.557*** (0.074)	-0.608*** (0.177)
Cros	0.096** (0.043)	0.319*** (0.036)	0.099** (0.043)	0.321*** (0.036)
LNtPE	-0.633*** (0.110)	-0.136 (0.167)	-0.634*** (0.110)	-0.137 (0.167)
LNaPE	-0.955*** (0.109)	-0.273 (0.169)	-0.954*** (0.108)	-0.273 (0.169)
tPEaPE	0.212*** (0.036)	0.053 (0.055)	0.212*** (0.036)	0.053 (0.055)
LNdPE	0.306*** (0.008)	0.157*** (0.012)	0.306*** (0.008)	0.157*** (0.012)
LNVol	0.076*** (0.018)	0.027 (0.023)	0.079*** (0.019)	0.029 (0.023)
T_List	2.235*** (0.069)	2.003*** (0.082)	2.413*** (0.068)	2.197*** (0.082)
A_List	0.041 (0.047)	-0.378*** (0.120)	-0.060 (0.044)	-0.259* (0.134)
T_ListGE	0.416*** (0.086)	0.144*** (0.052)		
A_ListGE	-0.175*** (0.056)	-0.013 (0.082)		
T_ListRQ			0.328*** (0.093)	0.017 (0.057)
A_ListRQ			-0.116** (0.049)	-0.107 (0.098)
LNSize1		-0.302*** (0.006)		-0.302*** (0.006)
Constant	0.673* (0.393)	-1.539** (0.599)	0.463 (0.392)	-1.943*** (0.574)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.304	0.286	0.303	0.286

Robust standard errors in parentheses

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

that the empirical results for these two indicators are opposite to the prediction that good investor protection should lead to more likelihood of making partial acquisition confirms the robustness of the findings in the case of the controlling block premium (DZ).

**Table 20: Logistic Regression Analysis results for the impact of each World Governance Indicator**

In this table, the remaining two World Governance Indicators which are RL for Rule of Law, and CC for Control of Corruption are included. These two variables are tested one at a time with both the full sample size and reduced sample size (relative size controlled). Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. Year fixed-effects and country fixed-effects are controlled (coefficients not reported) and the test is run with clustered robust standard errors. Regression results for each predictor variable with reduced sample size but without relative size controlled are also reported in the appendix (see Appendix M).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
RL	-0.540*** (0.068)	-0.591*** (0.159)		
CC			-0.629*** (0.083)	-0.751*** (0.181)
Cros	0.096** (0.043)	0.320*** (0.036)	0.098** (0.043)	0.319*** (0.036)
LNtPE	-0.633*** (0.109)	-0.137 (0.167)	-0.632*** (0.109)	-0.138 (0.167)
LNaPE	-0.952*** (0.107)	-0.274 (0.169)	-0.951*** (0.107)	-0.273 (0.169)
tPEaPE	0.212*** (0.036)	0.053 (0.055)	0.211*** (0.036)	0.053 (0.055)
LNdPE	0.306*** (0.008)	0.157*** (0.012)	0.306*** (0.008)	0.157*** (0.012)
LNVol	0.077*** (0.018)	0.029 (0.023)	0.077*** (0.018)	0.027 (0.023)
T_List	2.325*** (0.055)	2.161*** (0.069)	2.408*** (0.063)	2.075*** (0.060)
A_List	-0.079** (0.039)	-0.300*** (0.108)	-0.086 (0.053)	-0.317*** (0.097)
T_ListRL	0.389*** (0.083)	0.043 (0.046)		
A_ListRL	-0.103** (0.048)	-0.077 (0.076)		
T_ListCC			0.325*** (0.075)	0.105*** (0.039)
A_ListCC			-0.096** (0.042)	-0.064 (0.066)
LNSize1		-0.302*** (0.006)		-0.302*** (0.006)
Constant	0.449 (0.382)	-1.934*** (0.565)	0.549 (0.388)	-1.769*** (0.575)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.304	0.286	0.304	0.286

Robust standard errors in parentheses

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

Not only Government Effectiveness and Regulatory Quality that show a negatively significant relationships with the dependent variable, another two World Governance Indicators which are Rule of Law (RL) and Control of Corruption (CC)

also have negatively significant relationship with the dependent variable. In Table 20, in model (1), the coefficient on RL is -0.540 or the odd ratio of 0.582. A unit increase in the level of Rule of Laws indicator would decrease the odd of making partial acquisition by 41.7 percent or decrease the probability of making partial acquisition by 3.6 percent. The coefficient remains negatively significant across all models regardless of whether relative size is controlled and regardless of the sample size. For model (3), the coefficient on CC is -0.629 which equals to the odd ratio of 0.533. A unit increase in the level of Control of Corruption indicator would decrease the odd of making partial acquisition by 46.68 percent or decrease the probability of making partial acquisition by 4.22 percent. These results are again, in contrast with the prediction that under better governance environment, an increase in these investor protection level would lead to an increase in the odd of the acquirer making partial acquisition. The regression analysis in the next section will consider the subsample of cross-border acquisitions to see whether the result would change like the case of the previous tests.

**Table 21: World Governance Indicators in Cross-border Acquisitions**

The interaction terms between the dummy variable of cross-border acquisitions and Government Effectiveness (GE) and Regulatory Quality (RQ) are included. The four models are tested one at a time with clustered robust standard error. Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. Regression results with reduced sample size but without relative size controlled are also reported in the appendix (see Appendix M).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
GE	0.355 (0.285)	-0.449 (0.787)		
Cros	-0.120*** (0.034)	-0.105 (0.079)	-0.108*** (0.038)	-0.191** (0.085)
CrosGE	0.156*** (0.031)	0.295*** (0.049)		
RQ			0.291 (0.249)	-0.363 (0.697)
CrosRQ			0.159*** (0.032)	0.382*** (0.057)
LNtPE	-0.636***	-0.144	-0.636***	-0.142

	(0.110)	(0.167)	(0.110)	(0.167)
LNaPE	-0.958***	-0.281*	-0.957***	-0.279*
	(0.109)	(0.169)	(0.108)	(0.169)
tPEaPE	0.213***	0.055	0.213***	0.054
	(0.036)	(0.055)	(0.036)	(0.055)
LNdPE	0.306***	0.156***	0.306***	0.155***
	(0.008)	(0.012)	(0.008)	(0.012)
LNVol	0.077***	0.028	0.079***	0.032
	(0.018)	(0.023)	(0.019)	(0.023)
T_List	2.220***	1.992***	2.405***	2.191***
	(0.066)	(0.081)	(0.066)	(0.081)
A_List	0.063	-0.387***	-0.041	-0.286**
	(0.047)	(0.120)	(0.043)	(0.138)
T_ListGE	0.426***	0.150***		
	(0.084)	(0.051)		
A_ListGE	-0.190***	-0.005		
	(0.057)	(0.083)		
T_ListRQ			0.332***	0.018
			(0.091)	(0.057)
A_ListRQ			-0.130**	-0.086
			(0.051)	(0.101)
LNSize1		-0.302***		-0.303***
		(0.007)		(0.007)
Constant	1.731***	-0.646	1.914***	-0.748
	(0.346)	(0.571)	(0.377)	(0.720)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.304	0.287	0.303	0.287

Robust standard errors in parentheses

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

In Table 21, the subsample of cross-border acquisitions is considered by including the interaction term between the predictor variable (Governance Indicators) and the cross-border acquisition dummy. The interaction terms show positively significant relationship with the dependent variable across all models. Like the previous tests, the interaction term has an opposite sign on the coefficient to the main effect. In model (1) the coefficient on GE is 0.355 (statistically insignificant at all confidence levels) while the linear combination of GE and CrosGE gives a coefficient of 0.511 or the odd ratio of 1.667 which is statistically significant at 10 percent confidence level. The interpretation would be that given a unit increase in the level of government effectiveness, the odd of making partial acquisition is higher by 66.7 percent in cross-border acquisitions. With relative sized controlled in model (2), the coefficient from the linear combination of GE and GrosGE is -0.154 or the odd ratio of 0.857, though the

relationship is statistically insignificant at all confidence levels. The results from model (3) and model (4) also show similar stories. The linear combination between RQ and the interaction term (CrosRQ) is 0.450 and 0.019, respectively, but the relationships are not statistically significant (significant at 10 percent confidence level for model (3)).

In table 22 (below), the remaining two indicators which are Rule of Laws and Control of Corruptions, and their interaction terms are tested. The regression results are similar across all models. Rule of Law and Control of Corruptions have negatively significant relationship with the dependent variable in models (2) and (3), but their interaction terms show opposite signs on the coefficients to the main effects (pure RL and CC). For example, in model (2), the coefficient on

**Table 22: World Governance Indicators in Cross-border Acquisitions**

The interaction terms between the dummy variable of cross-border acquisitions and Rule of Laws (RL) and Control of Corruptions (CC) are included. The four models are tested one at a time with clustered robust standard error. Year fixed-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. Regression results with reduced sample size but without relative size controlled are also reported in the appendix (see Appendix M).

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
RL	0.199 (0.194)	-0.796*** (0.181)		
Cros	-0.055* (0.032)	-0.062 (0.070)	0.003 (0.030)	0.045 (0.064)
CrosRL	0.121*** (0.028)	0.295*** (0.046)		
CC			-0.665*** (0.082)	-0.348 (0.730)
CrosCC			0.073*** (0.026)	0.204*** (0.039)
LNtPE	-0.635*** (0.109)	-0.145 (0.167)	-0.633*** (0.109)	-0.143 (0.167)
LNaPE	-0.955*** (0.107)	-0.282* (0.169)	-0.953*** (0.107)	-0.279* (0.169)
tPEaPE	0.213*** (0.036)	0.055 (0.055)	0.212*** (0.036)	0.055 (0.055)
LNdPE	0.305*** (0.008)	0.155*** (0.012)	0.306*** (0.008)	0.156*** (0.012)
LNVol	0.078***	0.031	0.077***	0.029

	(0.018)	(0.023)	(0.018)	(0.023)
T_List	2.316***	2.151***	2.401***	2.064***
	(0.053)	(0.069)	(0.061)	(0.060)
A_List	-0.064*	-0.307***	-0.079	-0.330***
	(0.038)	(0.109)	(0.052)	(0.097)
T_ListRL	0.394***	0.048		
	(0.081)	(0.046)		
A_ListRL	-0.114**	-0.072		
	(0.049)	(0.077)		
T_ListCC			0.329***	0.111***
			(0.074)	(0.039)
A_ListCC			-0.102**	-0.054
			(0.042)	(0.066)
LNSize1		-0.303***		-0.302***
		(0.007)		(0.007)
Constant	1.812***	-1.590***	0.609	-0.890
	(0.360)	(0.586)	(0.377)	(0.647)
Observations	585,545	107,598	585,545	107,598
Pseudo R2	0.304	0.287	0.304	0.287

Robust standard errors in parentheses

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

RL is -0.796 which is statistically significant at 1 percent confidence level while the coefficient on the interaction term is 0.295. The linear combination of the two gives a coefficient equals to -0.500 which is statistically significant at 1 percent confidence level.

In cross-border acquisitions, for Government Effectiveness and Regulatory Quality, the linear combinations show positive relationships to the dependent variable, but the relationships are statistically insignificant. While for Rule of Law and Control of Corruptions, the relationships from the linear combinations are negatively significant, but the magnitude of the effect is smaller than the main effects (pure RL and pure CC) despite the opposite signs. To summarize, the impact of the level of governance as measured by these governance indicators on the odd of making partial acquisition is less pronounced in cross-border transactions.

## 5. Conclusion

Mergers and acquisitions are global phenomenon and moral hazard is not only lingering inside a corporation but rather prevalent and different across countries. The implications of this paper are mainly two major theoretical concepts which are decision on making partial acquisition or full acquisition and moral hazard inherent in institutional environment. The empirical results show several different stories. The hypothesis was that an increase in the controlling block premium, which is a proxy for measurement of private benefits of control, should lead to lower odd of the acquirer making partial acquisitions. However, when considering the full sample size, the increase in controlling block premium tends to increase the odd of making partial acquisition which is opposite to the hypothesis. Apart from controlling block premium, another corporate governance indicators are introduced and used as explanatory variables as private benefits of control should be correlated with corporate governance in the field of investor protection. The results on all corporate governance indicators tell the same story as the controlling block premium. Higher private benefits of control and lower level of investor protection tend to increase the odd of making partial acquisitions. Thus, there is no evidence implying that moral hazard drives the acquirer to make full acquisition instead of partial acquisition. But moral hazard is an agency problem arising from asymmetric information problem. In an environment where the controlling block premium or the private benefits of control is high, the asymmetric information problem could be more severe, which could imply high uncertainty in the true value of the target facing the acquirer. To limit the exposure to value loss due to private benefits of control in the target firm, the acquirer could decide to make partial acquisition to have prior ownership via partial acquisition to gain more assessment of

the true value of the target before subsequently make full acquisition. In other word, partial acquisition could be an initial stage of the acquirer's entire investment plan or a market entry strategy.

When considering the subsample by listing status and subsample of cross-border transactions, the predictor variables still show the results in contrast with the prediction. However, target's listing status does have a significant impact on the relationship (the slope) between the controlling block premium and the likelihood of making partial acquisition, confirming the market discipline hypothesis that the impact of private benefits of control is lower when acquiring a publicly listed target. However, acquirer's listing status does not show any significant impact on the slope of the controlling block premium. In cross-border transactions, the results are consistent with the hypothesis that the difference between investor protection or private benefits of control between countries could facilitates corporate resources extraction. As the target firms and acquirer firms are incorporated in different countries, they have different laws, different level of investor protection, and different level of private benefits of control. Entrenched managers from country with good institutional environment could be bidding for a target in country with worse institutional environment and vice versa.

The final conclusion is that private benefits of control does have a significance influence on the decision to make partial or full acquisitions. But having control for the profit-maximizing reasons to make full acquisition, the increase in private benefits of control does not increase the odd of making full acquisition as predicted. As moral hazard is a form of agency problem arising from asymmetric information problem which possibly reflects uncertainty facing the decision makers (the acquirer), the acquirer's reaction to moral hazard or private benefits of control in the environment is



making partial acquisition instead of full acquisition. The fact that the controlling block premium is country-specific and time invariant but still shows significant relationship with the dependent variable does imply that the controlling block premium does send a signal to the decision makers. And by making partial acquisition, is how the acquirers react to the signal.

### Acknowledgement

I am deeply grateful to Assoc. Prof. Manapol Ekkayokkaya for numerous helpful suggestions and comments. All the remaining errors are mine.

### Appendix A: Predictor Variables of Interest

<i>Country</i>	<i>Controlling Block Premium</i>	<i>Antidirector rights index</i>	<i>Anti-self-dealing index</i>	<i>Formalism index (Evicting a tenant)</i>	<i>Formalism index (Collecting a bounced cheque)</i>
Argentina	0.27	4.00	0.34	5.49	5.4
Australia	0.02	4.00	0.76	1.99	1.8
Austria	0.38	2.00	0.21	3.62	3.52
Brazil	0.65	3.00	0.27	3.83	3.06
Canada	0.01	5.00	0.64	2.32	2.09
Chile	0.18	5.00	0.63	4.79	4.57
Colombia	0.27	3.00	0.57	3.94	4.11
Czech Republic	0.58	-	0.33	3.54	0.18
Denmark	0.08	2.00	0.46	3.6	2.55
Egypt	0.04	2.00	0.20	3.6	3.79
Finland	0.02	3.00	0.46	2.53	3.14
France	0.02	3.00	0.38	3.6	3.23
Germany	0.10	1.00	0.28	3.76	3.51
Hong Kong	0.00	5.00	0.96	3.13	0.73
Indonesia	0.07	2.00	0.65	3.88	3.9
Israel	0.27	3.00	0.73	3.9	3.3
Italy	0.37	1.00	0.42	4.24	4.04
Japan	-0.04	4.00	0.50	3.72	2.98
Malaysia	0.07	4.00	0.95	3.21	2.34
Mexico	0.34	1.00	0.17	4.82	4.71
Netherlands	0.02	2.00	0.20	3	3.07
New Zealand	0.03	4.00	0.95	1.25	1.58
Norway	0.01	4.00	0.42	3.71	2.95
Peru	0.14	3.00	0.45	5.42	5.6
Philippines	0.13	3.00	0.22	5	5
Poland	0.13	-	0.29	4.08	0.24

Portugal	0.20	3.00	0.44	4.54	3.93
Singapore	0.03	4.00	1.00	3.11	2.5
South Africa	0.02	5.00	0.81	3.68	1.68
South Korea	0.16	2.00	0.47	3.33	3.37
Spain	0.04	4.00	0.37	4.81	5.25
Sweden	0.07	3.00	0.33	3.31	2.98
Switzerland	0.06	2.00	0.27	3.96	3.13
Taiwan	0.00	3.00	0.56	3.04	2.37
Thailand	0.12	2.00	0.81	4.25	3.14
Turkey	0.37	2.00	0.43	3.49	2.53
United Kingdom	0.01	5.00	0.95	2.22	2.58
United States	0.01	5.00	0.65	2.97	2.62
Venezuela	0.27	1.00	0.09	5.81	6.01

**Appendix B: World Governance Indicators (Kaufmann et al., 2009)**

<i>Country</i>	<i>Government Effectiveness</i>	<i>Regulatory Quality</i>	<i>Rule of Law</i>	<i>Control of Corruption</i>
Argentina	-0.18	-0.65	-0.61	-0.44
Australia	1.9	1.78	1.76	2.03
Austria	1.71	1.64	1.92	1.82
Brazil	-0.01	0.19	-0.3	-0.03
Canada	1.93	1.66	1.81	2.03
Chile	1.24	1.58	1.25	1.31
Colombia	0.13	0.24	-0.5	-0.25
Czech Republic	1.07	1.09	0.85	0.37
Denmark	2.19	1.86	1.92	2.32
Egypt	-0.37	-0.17	-0.09	-0.67
Finland	1.95	1.58	1.87	2.34
France	1.54	1.25	1.4	1.43
Germany	1.65	1.46	1.72	1.77
Hong Kong	1.83	2.00	1.56	1.88
Indonesia	-0.29	-0.27	-0.66	-0.64
Israel	1.3	1.2	0.88	0.87
Italy	0.39	0.95	0.43	0.13
Japan	1.46	1.23	1.4	1.25
Malaysia	1.13	0.27	0.49	0.14
Mexico	0.18	0.45	-0.64	-0.26
Netherlands	1.86	1.75	1.76	2.19
New Zealand	1.76	1.72	1.85	2.32
Norway	1.95	1.34	1.96	1.88
Peru	-0.3	0.33	-0.74	-0.26
Philippines	0	-0.05	-0.49	-0.75
Poland	0.48	0.77	0.49	0.38
Portugal	1.05	1.12	1.02	1.08
Singapore	2.53	1.92	1.73	2.34
South Africa	0.75	0.63	0.12	0.3
South Korea	1.26	0.73	0.79	0.45
Spain	0.99	1.27	1.16	1.18
Sweden	1.99	1.68	1.9	2.24
Switzerland	2.06	1.66	1.86	2.15
Taiwan	0.88	1.07	0.77	0.55

Thailand	0.11	0.26	-0.03	-0.38
Turkey	0.2	0.22	0.09	0.1
United Kingdom	1.74	1.79	1.68	1.77
United States	1.65	1.58	1.65	1.55
Venezuela	-0.85	-1.44	-1.59	-1.13

### Appendix C: Descriptive Statistics of Investor Protection Indices

<i>VARIABLES</i>	(1) <i>N</i>	(2) <i>Mean</i>	(3) <i>S.D.</i>	(4) <i>Median</i>
Antidirector Rights index	578,004	4.127	1.274	5.000
Formalism index (1)	585,545	3.099	0.685	2.970
Formalism index (2)	585,545	2.769	0.762	2.620
Anti-Self-Dealing index	585,545	0.611	0.205	0.654
Government Effectiveness	585,545	1.553	0.453	1.650
Regulatory Quality	585,545	1.455	0.409	1.580
Rule of Laws	585,545	1.477	0.507	1.650
Control of Corruptions	585,545	1.484	0.579	1.550

### Appendix D: The Effects of Private Benefits of Control with Reduced Sample Size

(Relative Size not controlled)

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

<i>VARIABLES</i>	(1) PF	(2) PF	(3) PF	(4) PF
DZ	8.742*** (0.581)	8.721*** (0.586)	7.910*** (0.643)	7.893*** (0.647)
LNtPE	-0.346** (0.161)	-0.346** (0.161)	-0.344** (0.161)	-0.344** (0.161)
LNaPE	-0.513*** (0.162)	-0.513*** (0.162)	-0.512*** (0.162)	-0.511*** (0.162)
tPEaPE	0.125** (0.053)	0.125** (0.053)	0.125** (0.053)	0.125** (0.053)
LNdPE	0.196*** (0.012)	0.196*** (0.012)	0.196*** (0.012)	0.196*** (0.012)
LNVol	0.042** (0.021)	0.042** (0.021)	0.042** (0.021)	0.043** (0.021)
T_List	1.972*** (0.029)	1.967*** (0.031)	1.972*** (0.029)	1.968*** (0.031)
A_List	-0.348***	-0.348***	-0.434***	-0.434***

T_ListDZ	(0.055)	(0.055)	(0.063)	(0.063)
		0.096		0.080
		(0.238)		(0.237)
A_ListDZ			0.913***	0.912***
			(0.304)	(0.304)
Constant	-1.259**	-1.256**	-1.186**	-1.184**
	(0.496)	(0.496)	(0.496)	(0.496)
Observations	107,598	107,598	107,598	107,598
Pseudo R2	0.233	0.233	0.234	0.234

Robust standard errors in parentheses

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

### Appendix E: The effect of Private Benefits of Control and Public Status of the Targets and the Acquirers

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
DZ	12.007*** (1.834)	12.449*** (1.817)	11.704*** (1.866)	12.087*** (1.835)
LNtPE	-0.682*** (0.242)	-0.674*** (0.241)	-0.683*** (0.242)	-0.674*** (0.242)
LNaPE	-0.964*** (0.249)	-0.954*** (0.248)	-0.964*** (0.249)	-0.953*** (0.248)
tPEaPE	0.252*** (0.081)	0.248*** (0.080)	0.252*** (0.081)	0.248*** (0.081)
LNdPE	0.335*** (0.018)	0.335*** (0.018)	0.335*** (0.018)	0.335*** (0.018)
LNVol	0.066** (0.029)	0.066** (0.029)	0.067** (0.029)	0.066** (0.029)
T_List	2.287*** (0.049)	2.323*** (0.053)	2.287*** (0.049)	2.329*** (0.054)
A_List	0.071 (0.060)	0.074 (0.060)	0.040 (0.070)	0.029 (0.070)
T_ListDZ		-0.553* (0.324)		-0.633* (0.331)
A_ListDZ			0.338 (0.391)	0.474 (0.383)
Constant	-1.445** (0.731)	-1.505** (0.731)	-1.414* (0.732)	-1.467** (0.731)
Observations	37,781	37,781	37,781	37,781
Pseudo R2	0.319	0.319	0.319	0.319

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

### Appendix F: The effect of Private Benefits of Control in Cross-border Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF
DZ	7.983*** (0.659)	12.177*** (1.856)
Cros	0.517*** (0.038)	0.433*** (0.052)
CrosDZ	-1.476*** (0.248)	-1.333*** (0.331)
LNtPE	-0.351** (0.161)	-0.667*** (0.242)
LNaPE	-0.532*** (0.163)	-0.949*** (0.248)
tPEaPE	0.127** (0.053)	0.244*** (0.081)
LNdPE	0.199*** (0.012)	0.335*** (0.018)
LNVol	0.034 (0.021)	0.064** (0.029)
T_List	1.972*** (0.031)	2.333*** (0.054)
A_List	-0.400*** (0.063)	0.023 (0.070)
T_ListDZ	0.113 (0.242)	-0.674** (0.337)
A_ListDZ	0.851*** (0.306)	0.479 (0.385)
Constant	-1.341*** (0.498)	-1.564** (0.733)
Observations	107,598	37,781
Pseudo R2	0.238	0.321

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

### Appendix G: The effect of Private Benefits of Control and Relative Size

Size3 is computed as the transaction value (\$mil) divided by the target's total assets (\$mil). The number of transactions in the sample size is 69,145 which is more than that of Size2. Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF
DZ	6.407*** (1.312)	8.439*** (1.276)
Cros	0.244** (0.095)	-0.001 (0.079)
LNtPE	-0.167 (0.302)	-1.049*** (0.220)
LNaPE	-0.513* (0.297)	-1.394*** (0.251)
tPEaPE	0.138 (0.098)	0.355*** (0.072)
LNdPE	0.356*** (0.020)	0.357*** (0.015)
LNVol	0.178*** (0.039)	0.172*** (0.031)
T_List	1.701*** (0.052)	2.067*** (0.056)
A_List	-0.921*** (0.137)	-1.192*** (0.128)
T_ListDZ	-2.228*** (0.276)	-1.519*** (0.255)
A_ListDZ	1.254*** (0.429)	1.591*** (0.407)
LNSize3	-0.874*** (0.019)	
Constant	-1.783* (1.052)	2.574*** (0.864)
Observations	57,769	57,769
Pseudo R2	0.490	0.369

Robust standard errors in parentheses

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

## Appendix H: Antidirector Rights index and The Decision to Make Partial or Full

### Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
LP	-0.048 (0.155)	-0.306* (0.159)	0.155 (0.457)	-0.112 (0.450)
Cros	0.441*** (0.036)	-0.873*** (0.109)	0.349*** (0.046)	-0.676*** (0.123)
CrosLP		0.336*** (0.027)		0.272*** (0.032)
LNtPE	-0.374** (0.165)	-0.345** (0.165)	-0.703*** (0.245)	-0.702*** (0.246)
LNaPE	-0.526*** (0.166)	-0.499*** (0.166)	-0.978*** (0.252)	-0.981*** (0.252)
tPEaPE	0.128** (0.054)	0.119** (0.054)	0.258*** (0.082)	0.258*** (0.082)
LNdPE	0.200*** (0.012)	0.196*** (0.012)	0.335*** (0.018)	0.334*** (0.018)
LNVol	0.036* (0.022)	0.041* (0.022)	0.065** (0.029)	0.068** (0.029)
T_List	2.729*** (0.098)	2.635*** (0.098)	2.584*** (0.129)	2.492*** (0.129)
A_List	-0.342** (0.136)	-0.329** (0.136)	0.067 (0.140)	0.142 (0.139)
T_ListLP	-0.188*** (0.024)	-0.167*** (0.024)	-0.075** (0.034)	-0.056* (0.034)
A_ListLP	0.001 (0.037)	0.003 (0.037)	-0.005 (0.039)	-0.019 (0.039)
Constant	0.930 (0.761)	1.853** (0.776)	0.961 (1.889)	1.981 (1.862)
Observations	106,643	106,643	37,553	37,553
Pseudo R2	0.239	0.243	0.322	0.324

Robust standard errors in parentheses

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

### Appendix I: Formalism index and The Decision to Make Partial or Full Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
FL1	0.826*** (0.146)	0.780* (0.456)		
FL2			0.766*** (0.126)	0.562 (0.421)
Cros	0.406*** (0.036)	0.340*** (0.046)	0.414*** (0.035)	0.343*** (0.046)
LNtPE	-0.350** (0.161)	-0.680*** (0.242)	-0.356** (0.161)	-0.684*** (0.243)
LNaPE	-0.528*** (0.162)	-0.962*** (0.249)	-0.532*** (0.163)	-0.964*** (0.250)
tPEaPE	0.127** (0.053)	0.249*** (0.081)	0.128** (0.053)	0.251*** (0.081)
LNdPE1	0.200*** (0.012)	0.335*** (0.018)	0.200*** (0.012)	0.335*** (0.018)
LNVol	0.029 (0.021)	0.061** (0.029)	0.032 (0.021)	0.067** (0.030)
T_List	2.376*** (0.118)	2.202*** (0.218)	2.120*** (0.096)	1.737*** (0.191)
A_List	-0.288 (0.212)	-0.378 (0.235)	-0.007 (0.160)	-0.144 (0.192)
T_ListFL1	-0.127*** (0.036)	0.028 (0.064)		
A_ListFL1	-0.012 (0.058)	0.126* (0.066)		
T_ListFL2			-0.052 (0.034)	0.185*** (0.062)
A_ListFL2			-0.105** (0.047)	0.063 (0.057)
Constant	-3.805*** (0.678)	-3.652** (1.556)	-3.360*** (0.611)	-2.747** (1.342)
Observations	107,598	37,781	107,598	37,781
Pseudo R2	0.237	0.321	0.237	0.321

Robust standard errors in parentheses

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

### Appendix J: Formalism index in Cross-border Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
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FL1	1.042*** (0.155)	1.001** (0.453)		
Cros	1.285*** (0.121)	1.025*** (0.171)	0.833*** (0.093)	0.730*** (0.142)
CrosFL1	-0.279*** (0.037)	-0.218*** (0.051)		
FL2			0.887*** (0.133)	0.709* (0.418)
CrosFL2			-0.153*** (0.031)	-0.137*** (0.046)
LNtPE	-0.350** (0.161)	-0.674*** (0.243)	-0.359** (0.161)	-0.687*** (0.243)
LNaPE	-0.526*** (0.162)	-0.950*** (0.249)	-0.536*** (0.163)	-0.966*** (0.250)
tPEaPE	0.126** (0.053)	0.246*** (0.081)	0.129** (0.053)	0.251*** (0.081)
LNdPE	0.198*** (0.012)	0.334*** (0.018)	0.200*** (0.012)	0.335*** (0.018)
LNVol	0.030 (0.021)	0.062** (0.029)	0.033 (0.021)	0.068** (0.030)
T_List	2.374*** (0.119)	2.256*** (0.218)	2.148*** (0.097)	1.803*** (0.194)
A_List	-0.222 (0.212)	-0.370 (0.237)	0.022 (0.160)	-0.140 (0.193)
T_ListFL1	-0.130*** (0.037)	0.008 (0.064)		
A_ListFL1	-0.027 (0.058)	0.128* (0.066)		
T_ListFL2			-0.064* (0.034)	0.161** (0.063)
A_ListFL2			-0.111** (0.047)	0.065 (0.057)
Constant	-4.467*** (0.694)	-4.351*** (1.552)	-3.672*** (0.619)	-3.144** (1.337)
Observations	107,598	37,781	107,598	37,781
Pseudo R2	0.238	0.322	0.237	0.322

Robust standard errors in parentheses

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

## Appendix K: Anti-Self-Dealing index and The Decision to Make Partial or Full

### Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF
DK	-4.083***	-4.418*	-4.910***	-5.362**

	(0.752)	(2.312)	(0.770)	(2.296)
Cros	0.415***	0.345***	-0.249***	-0.245**
	(0.035)	(0.046)	(0.094)	(0.112)
CrosDK			1.065***	1.009***
			(0.139)	(0.179)
LNtPE	-0.355**	-0.677***	-0.352**	-0.665***
	(0.161)	(0.243)	(0.161)	(0.243)
LNaPE	-0.532***	-0.959***	-0.523***	-0.943***
	(0.163)	(0.249)	(0.163)	(0.249)
tPEaPE	0.128**	0.248***	0.125**	0.244***
	(0.053)	(0.081)	(0.053)	(0.081)
LNdPE	0.200***	0.335***	0.199***	0.335***
	(0.012)	(0.018)	(0.012)	(0.018)
LNVol	0.034	0.063**	0.034	0.064**
	(0.021)	(0.029)	(0.021)	(0.029)
T_List	2.071***	2.449***	2.035***	2.396***
	(0.088)	(0.121)	(0.088)	(0.121)
A_List	-0.400***	0.074	-0.412***	0.103
	(0.128)	(0.143)	(0.128)	(0.143)
T_ListDK	-0.152	-0.280	-0.112	-0.211
	(0.137)	(0.201)	(0.137)	(0.202)
A_ListDK	0.134	-0.033	0.178	-0.052
	(0.222)	(0.267)	(0.222)	(0.268)
Constant	1.361**	1.510	1.864***	2.057
	(0.679)	(1.663)	(0.689)	(1.653)
Observations	107,598	37,781	107,598	37,781
Pseudo R2	0.237	0.321	0.238	0.322

Robust standard errors in parentheses

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

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## Appendix L: World Governance Indicators and the Decision to Make Partial or Full

### Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF	(5) PF	(6) PF	(7) PF	(8) PF
GE	-0.793*** (0.166)	-1.072** (0.462)						
RQ			-0.568*** (0.154)	-0.829** (0.414)				
RL					-0.550*** (0.135)	-0.880** (0.353)		

CC							-0.741***	-0.972**
							(0.153)	(0.446)
Cros	0.408***	0.338***	0.410***	0.341***	0.410***	0.339***	0.408***	0.341***
	(0.035)	(0.045)	(0.035)	(0.045)	(0.035)	(0.045)	(0.035)	(0.045)
LNtPE	-0.351**	-0.674***	-0.353**	-0.685***	-0.352**	-0.677***	-0.353**	-0.683***
	(0.161)	(0.241)	(0.161)	(0.242)	(0.161)	(0.241)	(0.161)	(0.241)
LNaPE	-0.528***	-0.956***	-0.529***	-0.966***	-0.529***	-0.958***	-0.529***	-0.965***
	(0.162)	(0.248)	(0.163)	(0.248)	(0.162)	(0.248)	(0.162)	(0.248)
tPEaPE	0.127**	0.247***	0.127**	0.250***	0.127**	0.248***	0.127**	0.250***
	(0.053)	(0.080)	(0.053)	(0.081)	(0.053)	(0.080)	(0.053)	(0.080)
LNdPE	0.200***	0.335***	0.200***	0.335***	0.200***	0.335***	0.200***	0.335***
	(0.012)	(0.018)	(0.012)	(0.018)	(0.012)	(0.018)	(0.012)	(0.018)
LNVol	0.029	0.059**	0.032	0.061**	0.032	0.060**	0.030	0.061**
	(0.022)	(0.029)	(0.021)	(0.029)	(0.021)	(0.029)	(0.021)	(0.029)
T_List	1.708***	1.913***	1.928***	2.073***	1.878***	1.939***	1.808***	2.097***
	(0.080)	(0.138)	(0.080)	(0.149)	(0.067)	(0.119)	(0.058)	(0.103)
A_List	-0.124	0.340**	-0.077	0.304	-0.119	0.257*	-0.167*	0.243*
	(0.111)	(0.149)	(0.127)	(0.214)	(0.100)	(0.145)	(0.090)	(0.130)
T_ListGE	0.181***	0.267***						
	(0.050)	(0.090)						
A_ListGE	-0.153**	-0.200**						
	(0.075)	(0.097)						
T_ListRQ			0.037	0.171				
			(0.056)	(0.107)				
A_ListRQ			-0.199**	-0.183				
			(0.093)	(0.149)				
T_ListRL					0.074	0.267***		
					(0.045)	(0.081)		
A_ListRL					-0.171**	-0.151		
					(0.070)	(0.097)		
T_ListCC							0.125***	0.153**
							(0.038)	(0.069)
A_ListCC							-0.132**	-0.137*
							(0.061)	(0.082)
Constant	0.005	0.333	-0.362	-0.078	-0.352	0.006	-0.147	0.103
	(0.553)	(1.037)	(0.541)	(0.964)	(0.532)	(0.917)	(0.538)	(0.992)
Observations	107,598	37,781	107,598	37,781	107,598	37,781	107,598	37,781
Pseudo R2	0.237	0.321	0.237	0.321	0.237	0.321	0.237	0.321

Robust standard errors in parentheses

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

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## Appendix M: World Governance Indicators in Cross-border Acquisitions

Year fix-effects and country fixed-effects are controlled but their coefficients are not reported. Other variables which are the target's industry PE ratio, acquirer's industry PE ratio, the difference in target and acquirer's industry PE ratio, volatility and relative size are natural-log-transformed. The tests are run with clustered robust standard error.

VARIABLES	(1) PF	(2) PF	(3) PF	(4) PF	(5) PF	(6) PF	(7) PF	(8) PF
GE	-0.987***	-1.214***						
	(0.170)	(0.466)						
Cros	0.041	0.142	-0.014	0.060	0.097	0.214**	0.185***	0.303***
	(0.076)	(0.120)	(0.081)	(0.144)	(0.068)	(0.109)	(0.062)	(0.101)
CrosGE	0.257***	0.131*						
	(0.047)	(0.075)						
RQ			-0.816***	-1.044**				
			(0.159)	(0.430)				
CrosRQ			0.317***	0.198**				

RL			(0.054)	(0.097)	-0.729***	-0.975***		
CrosRL					(0.138)	(0.361)		
CC					0.242***	0.089		
CrosCC					(0.044)	(0.071)	-0.873***	-1.000**
							(0.156)	(0.452)
LNtPE	-0.357**	-0.671***	-0.356**	-0.679***	-0.358**	-0.675***	-0.357**	-0.683***
	(0.161)	(0.241)	(0.161)	(0.242)	(0.161)	(0.241)	(0.161)	(0.241)
LNaPE	-0.535***	-0.951***	-0.533***	-0.958***	-0.536***	-0.956***	-0.533***	-0.964***
	(0.162)	(0.248)	(0.163)	(0.248)	(0.162)	(0.248)	(0.162)	(0.248)
tPEaPE	0.128**	0.246***	0.128**	0.248***	0.129**	0.247***	0.128**	0.250***
	(0.053)	(0.080)	(0.053)	(0.081)	(0.053)	(0.080)	(0.053)	(0.080)
LNdPE	0.199***	0.334***	0.198***	0.334***	0.198***	0.334***	0.199***	0.335***
	(0.012)	(0.018)	(0.012)	(0.018)	(0.012)	(0.018)	(0.012)	(0.018)
LNVol	0.030	0.059**	0.034	0.062**	0.034	0.060**	0.032	0.061**
	(0.022)	(0.028)	(0.021)	(0.029)	(0.021)	(0.029)	(0.021)	(0.029)
T_List	1.698***	1.880***	1.924***	2.053***	1.869***	1.921***	1.799***	2.092***
	(0.080)	(0.140)	(0.080)	(0.149)	(0.067)	(0.120)	(0.058)	(0.104)
A_List	-0.132	0.336**	-0.099	0.281	-0.125	0.252*	-0.177**	0.242*
	(0.110)	(0.149)	(0.127)	(0.216)	(0.100)	(0.145)	(0.090)	(0.130)
T_ListGE	0.185***	0.288***						
	(0.050)	(0.091)						
A_ListGE	-0.145*	-0.198**						
	(0.075)	(0.097)						
T_ListRQ			0.037	0.183*				
			(0.056)	(0.107)				
A_ListRQ			-0.180*	-0.166				
			(0.092)	(0.151)				
T_ListRL					0.078*	0.278***		
					(0.046)	(0.082)		
A_ListRL					-0.166**	-0.147		
					(0.070)	(0.097)		
T_ListCC							0.129***	0.156**
							(0.038)	(0.070)
A_ListCC							-0.123**	-0.136*
							(0.061)	(0.082)
Constant	0.337	0.553	0.027	0.237	-0.050	0.154	0.069	0.146
	(0.558)	(1.040)	(0.546)	(0.977)	(0.536)	(0.922)	(0.541)	(0.996)
Observations	107,598	37,781	107,598	37,781	107,598	37,781	107,598	37,781
Pseudo R2	0.237	0.321	0.237	0.321	0.237	0.321	0.237	0.321

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

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