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Essays on Takeovers and Executive Compensation

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To my family

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Van Diem Nguyen

Gothenburg, April 2015

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INTRODUCTION

"Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer and Vishny, 1997).

Approaches to corporate governance can be classified into two broad categories, internal and external governance mechanisms. Takeovers and the market for corporate control (Manne, 1965) are viewed as the primary external mechanism to address the separation of ownership and control (Easterbrook and Fischel, 1991; Jensen, 1993). In terms of internal mechanisms, incentive contracts are common in practice and probably the disciplining device that attracts the most controversy (Murphy, 1999; Bebchuk and Fried, 2003). This thesis discusses topics related to both takeovers and incentive contracts. The thesis consists of three chapters, the first two chapters deal with shareholder wealth changes in takeovers around the world, and the third chapter investigates the governance role of executive compensation in Swedish family firms.

Corporate takeovers are among the largest investments for a firm, and an important mechanism promoting efficient use of corporate resources through reallocation of both capital, and managerial talent. The takeover literature covers a wide range of topics including the impact of statutory and regulatory restrictions on the acquisition process (disclosure and target defenses), bid strategies (preemption, markup pricing, bid jumps, toeholds, payment method, hostility), changes in shareholder wealth due to changes in control, economic factors underlying takeover gains, and efficiency of the market for

corporate control (Burkart and Panunzi, 2006; Betton, Eckbo, and Thorburn, 2008).

Empirical evidence in the takeover literature is mostly obtained from mergers and acquisitions in the US. Nevertheless, the US market can be viewed as a global outlier in several aspects. First, the US market is by far the largest and most active market for corporate control. From 2000 to 2013, takeovers targeting US listed firms accounted for almost half of all control transfers in public firms around the globe.[1] Takeover volume in the US over the same period was three times as large as the non-US average. Second, despite the recent trend of corporate governance convergence across countries, regulations concerning takeovers (such as the mandatory bid rule and defensive measures) differ substantially between the US and the typical international setting.[2] These facts suggest that the US market and its takeover outcomes might differ from what is observed in the rest of the world. However, there is a lack of systematic comparison between the US and other countries in a single analysis. The first two chapters in my dissertation fill this gap by providing comparative analyses of takeover effects on shareholder wealth across countries.

The first chapter, **"The non–US premium discount in global takeovers,"** presents a comprehensive overview of takeover premium around the world, based on a sample of 8,000 transactions from 2000 to 2013 in 67 countries. US target shareholders receive, on average, a premium of 42 percent of the firm's trading price one month before the bid. Premiums in other countries are generally lower than in the US.

High premiums, on the one hand, could signal large value created by takeovers. On the other hand, they may imply that transfer of control is costly, hinting at frictions in the process. First, I investigate whether takeovers in the US are systematically more expensive than in other countries, and find a significant discount in bid offers to target firms outside

[1] According to the mergers and acquisitions database of S&P Capital IQ

[2] See, e.g., Nenova (2006), and Betton et al. (2008) for a comparison of US versus UK and European takeover laws.

the US. After controlling for common deal-level premium determinants (as in Betton et al. (2008)), the bid difference between US and non-US targets is approximately 7 percent of the target pre-deal stock price, equivalent to 27 percent of the median takeover premium for non-US targets.

Next, I examine whether the non-US discount can be explained by country characteristics commonly discussed in the takeover literature. These include the quality of legal investor protection (Rossi and Volpin, 2004), economic and financial market development (Croci and Petmezas, 2010), and potential competition in the market for corporate control (Aktas, de Bodt, and Roll, 2010). Of these country characteristics, the size of the economy in the target country, proxied by log GDP, is the most relevant premium determinant. It is also the only variable which can partly explain the non-US premium discount. After further controlling for a set of country characteristics, target firms in the US still earn more than in other countries by at least 4 percent of the target trading price before the deal announcement. A 4 percent discount is equivalent to 4 million dollars for a target of median size, and 31.5 million for a target of average size in the sample.

Though the magnitude of the non-US discount reduces after controlling for log GDP, the high sample correlation between log GDP and the US target indicator makes it hard to disentangle the economies of scale effect from other characteristics exclusive to the US. Furthermore, a significant proportion of the non-US premium discount is yet unexplained.

Anti–takeover provisions differ substantially between the US and the typical international setting (Nenova, 2006), and could be a candidate for rationalizing the price discount in takeovers targeting non-US firms. On the one hand, defensive measures may increase managerial resistance to takeovers and thus weaken the disciplinary role of the market for corporate control. On the other hand, they can strengthen the target's bargaining power, promote competition among bidders, and protect managers and firms from the disruptive

effects of takeovers (Burkart and Panunzi, 2006). The relationship between firm-specific takeover defences and control premium receives mixed evidence. Comment and Schwert (1995) and Heron and Lie (2006) show that targets adopting poison pills receive a higher premium. However, other recent studies find that premium is unaffected by classified boards (Bates, Becher, and Lemmon, 2008), the presence of poison pills and target hostility to the initial bid (Betton et al., 2008).

Since premiums can signal about takeover synergies and/or the relative bargaining power of the target, studying takeover gains and gain division could add information on the underlying sources of the non-US premium discount. The size of the economy and defensive mechanisms, while both positively related to the premium, imply two different channels. Size is related to takeover synergies whereas anti-takeover measures can strengthen the target bargaining position.

I explore this idea in the second chapter, **"Distribution of takeover gains: A comparison between the US and other major markets."** Since premiums reflect target gains in takeovers, premiums depend on both the synergistic gains created by the change in control, and the target's share in the takeover gains. Therefore, I propose two hypotheses to explain the non-US premium discount. First, US takeovers produce larger synergistic gains (the synergy hypothesis). Second, compared to other countries, target firms in the US have stronger bargaining power than acquirers and, hence, extract a larger proportion of takeover gains (the bargaining power hypothesis). The two hypotheses are not mutually exclusive.

I examine both the combined gain generated by the takeover, and how this gain is split between acquirers and targets, using domestic takeovers announced 2000–2013 in Australia, Canada, France, Germany, Japan, the UK and the US.[3] I find that US takeovers generate synergies, which is consistent with previous findings by Jensen and Ruback

[3]These seven countries account for the majority of takeovers around the world.

(1983), Bradley, Desai, and Kim (1988), Andrade, Mitchell, and Stafford (2001), and Bhagat, Dong, Hirshleifer, and Noah (2005). However, synergistic gains are not significantly larger in the US compared to in other markets and, hence, do not justify why target firms receive larger premiums. At the same time, I document systematic differences in the distribution of takeover gains, between US and non-US acquisitions. Target firms gain significantly more in the US than in other countries, in terms of both absolute and relative measures. The findings lend support to the bargaining power hypothesis but not to the synergy hypothesis.

The first two chapters of the thesis contribute to the literature on changes in shareholder wealth generated by takeovers. Examining takeover premiums around the world, the first chapter documents a substantial and statistically significant price discount in takeovers targeting non-US firms. This discount is robust to important premium determinants established in the literature, at both the deal and country levels. The second chapter investigates both value creation and value distribution in takeovers in 7 major markets, and suggest that strong bargaining power for US target firms can explain the non-US premium discount.

In addition, I revisit the relationship between takeover premium and investor protection, using updated measures of legal investor protection. Rossi and Volpin (2004) construct their shareholder protection measure based on the original anti-director right index (ADRI) by La Porta, Lopez-de Silanes, Shleifer, and Vishny (1998). As documented by Spamann (2010), the original ADRI necessitates adjustments, especially regarding the value for the US. This matters in the premium-shareholder protection relation analysis where the individual deal sample is used and US takeovers make up an important proportion of the sample. Indeed, after correcting for the index values, and separating the US effect, I find no evidence that investor protection significantly affects the premium. The finding holds for alternative measures of the legal quality.

The third chapter, **"Executive compensation in foundation–controlled firms,"** deals with the interdependence of two common internal governance mechanisms, i.e., large shareholder monitoring and managerial incentive contracts. The study is based on Swedish family firms, because the ownership structure in Sweden presents a unique setting to test for substitution between incentive contracts and monitoring. More specifically, a family can control a firm either directly or through the establishment of a foundation – an autonomous nonprofit entity. In the latter case, the family would donate their shareholdings to the foundation and thus give up their claims on the resulting cash flow rights. Due to the absence of cash flow rights, foundation–controlled (FC) firms can only use incentive contracts to discipline managers, whereas regular stockholders, who have both cash flow and control rights, can choose between direct monitoring and managerial compensation. Therefore, FC firms are expected to rely more heavily on incentive contracts, compared to non–FC firms. I empirically test this prediction using a sample of 193 listed family firms from 2001 to 2009, a total of 1241 firm–year observations. I find that executive compensation is larger and performance–based incentive schemes are stronger in FC firms than in non–FC firms. The differences in CEO pay are driven by a more pronounced use of option grants in FC firms. The results are robust to insider holding, family connection, and monitoring provided by creditor and other blockholders. The findings support the hypothesis that high-powered incentives serve as a substitution for shareholder monitoring.

The paper contributes to the literature on corporate governance in general, and governance of nonprofit firms in particular. Agrawal and Knoeber (1996) suggest that corporate governance mechanisms are interdependent and firms generally choose governance mechanisms optimally. FC firms are immune to both monitoring and takeover threats, and hence present a fairly unique setting to test for the power of alternative disciplining devices. Bøhren and Josefsen (2013) propose pressure from product market competition as a remedy for inadequate monitoring. Market competition, though effective, does not make corporate governance superfluous (Shleifer and Vishny, 1997). This paper provides

empirical evidence supporting the hypothesis that incentive contracts is a viable substitute for monitoring.

The paper also adds to the literature on ownership and control, particularly the strand on foundations and other nonprofits. Existing work on ownerless firms mainly focuses on their economic performance relative to stockholder–owned firms. In general, previous studies do not detect any profitability discount associated with this virtual ownership (Thomsen, 1996; Bøhren and Josefsen, 2013). Nevertheless, cross-sectional estimates of ownership impact on performance are not free from endogeneity.[4] This paper investigates the internal governance of FC firms and supports the view that ownerless firms employ alternative mechanisms to substitute for shareholder monitoring. The fact that ownerless firms resort to alternative disciplining devices can explain their competitive performance to firms with traditional ownership structure.

[4]FC firms may have distinct unobservable characteristics which affect firm performance. Even with panel data, using fixed effects is infeasible due to the lack of variation of ownership over time.

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PAPER 1

THE NON-US PREMIUM DISCOUNT IN GLOBAL TAKEOVERS

Van Diem Nguyen[*]

Abstract
This paper examines takeover premiums around the world and documents a significant discount in bid offers to target firms outside the US. Controlling for deal-level premium determinants, the non-US discount approximates seven percent of the target pre-deal stock price. I investigate whether the discount can be explained by country variation in legal investor protection, economic strength, financial market development, and potential competition in the takeover market. I find that the size of the economy in the target country is the most relevant premium determinant among these country characteristics. Forty percent of the non-US premium discount can be attributed to the size of economy. Even after controlling for a set of country characteristics, target firms in the US still earn more than in other countries by at least four percent of the target's trading price before the deal announcement. For the average firm in the sample, a four percent discount equals 31 million dollars.

Keywords: Takeover premium, investor protection, corporate control, mergers and acquisitions, corporate governance

JEL classification: G34, G38

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1.1 Introduction

In the US, target shareholders in takeovers are offered a premium of, on average, 45 percent of the firm's trading price two months before the bid (Betton, Eckbo, Thompson, and Thorburn, 2014). The literature relates the offer premium to multiple characteristics of the target, the acquirer, and the deal (Betton, Eckbo, and Thorburn, 2008). The US, however, is an atypical market for corporate control. This paper examines more than 8,000 successful takeovers announced 2000-2013 worldwide and finds that target firms in the US receive the highest premium, after adjusting for differences in deal-level characteristics. Further, I compare systematically takeover premiums between the US and other markets and document a substantial discount in offers to target firms outside the US. The non–US premium discount is robust to country differences in legal investor protection, financial market development, and takeover market competition. The non–US discount is at most partly explained by the size of the economy in the target country.

Despite being the most studied market in the takeover literature, the US can be viewed as a global outlier in several aspects. First, the US market is by far the largest and most active. From 2000 to 2013, takeovers targeting US listed firms accounted for almost half of all control transfers in public firms around the globe (according to the mergers and acquisitions database of S&P Capital IQ). Takeover volume in the US over the period was almost three times as large as the non-US average. Second, despite the recent trend of corporate governance convergence across countries, regulations concerning takeovers (such as the mandatory bid rule and defensive measures) exhibit apparent differences between the US system and the typical international setting.[1] These facts suggest the US market and its takeover outcomes might differ from what is observed in other countries.

[1] See, e.g., Nenova (2006), and Betton et al. (2008) for a comparison of US versus UK and European takeover laws.

I examine takeover premiums in 67 countries and find that raw premiums around the world, while positive and significant, are generally lower than in the US. The raw premium is the percentage difference between the offer price and the target stock price one month before the deal announcement. It is 42 percent for the US during the study period and averages 35 percent across other countries. It can be inferred from Rossi and Volpin (2004) that targets in the US and the UK on average receive higher offers than those in other countries. This paper shows that no market, including the UK, exhibits a significantly larger premium than the US after controlling for important premium determinants at the deal level.

Takeover presents an important mechanism promoting efficient use of corporate resources through reallocation of both capital and management talent. On the one hand, high premiums can imply more costly deals and thus impede value-enhancing takeovers, hinting at frictions in the process. On the other hand, high premiums may signal large synergies created by takeovers. The takeover literature devotes considerable attention to exploring factors that impact premiums, including deal characteristics such as the geographical scope of the transaction (domestic versus cross-border), the target's attitude to the bid (hostile versus friendly), bid form (private negotiation or tender offer), and means of payment (cash or equity). Firm attributes, such as target size, the acquirer's legal status, and bidding strategies (toehold, markup pricing, etc.) are other common determinants (see, e.g., Betton et al. (2008) and Martynova and Renneboog (2011) for reviews). In addition to these deal-level characteristics, the more recent and growing number of cross-country studies of mergers and acquisitions (M&As) also focus on variation in corporate governance standards (Rossi and Volpin, 2004; Bris and Cabolis, 2008; Martynova and Renneboog, 2008a, 2011).

In a systematic comparison of takeover premiums between the US and other countries, I document a substantial and statistically significant price discount in transactions targeting non-US firms. Controlling for deal-level determinants, the bid difference between US and non-US targets is approximately 7 percent of the target's trading price one month before

the announcement, equivalent to 27 percent of the median takeover premium for non-US targets. The non-US premium discount persists when I vary the benchmark pre-deal price from one day to 42 trading days prior to the deal.

I investigate whether the non-US discount can be explained by a set of proxies for target country characteristics. The law and finance literature associates the regulatory environment with resource allocation efficiency (Wurgler, 2000; McLean, Zhang, and Zhao, 2012), financial market development (La Porta, Lopez-de Silanes, Shleifer, and Vishny, 1997; Shleifer and Wolfenzon, 2002; La Porta, Lopez-De-Silanes, and Shleifer, 2006; Djankov, La Porta, Lopez-de Silanes, and Shleifer, 2008), governance (Doidge, Karolyi, and Stulz, 2007), and the outcomes of M&A markets (Burkart and Panunzi, 2004; Rossi and Volpin, 2004; Nenova, 2006). In terms of shareholder protection, the US system generally scores better than the average of countries included in the sample. Therefore, I test whether the premium gap between US and foreign firms is sensitive to the quality of legal investor protection in the target country. I use five measures of investor protection. Of these, two indices capture the rights of minority shareholder with respect to managers, one index measures legal protection for minority shareholders against tunneling by the controlling shareholder, and the other two directly address M&A regulations. Though shareholder protection is closely related to economic and financial market development, the latter captures matters beyond the legal proxy and can affect target gains in M&As, as discussed in Croci and Petmezas (2010). Furthermore, takeover activities and offer premiums can be related with market development through multiple channels, including funding in the capital market, firm decisions on corporate governance, potentials for product markets, and growth. Among the sample countries, the US stands out in terms of economic strength, financial market development, and takeover activities. Hence, I also test whether market development measures can explain the non-US premium discount. I use log GDP to proxy for the size of the economy, GDP growth and stock market return for growth expectation, and market capitalisation, stock value traded over GDP and stock turnover for stock market

development. I also take into account potential competition in the takeover market, using a constructed measure based on the liquidity index in Schlingemann, Stulz, and Walkling (2002) and Aktas, de Bodt, and Roll (2010).

I do not find evidence supporting the impact of investor protection on the takeover premium. Among the market proxies, the size of the economy, as measured by log GDP, is the most robust premium determinant and accounts for 40 percent of the non-US premium discount. Nevertheless, the premium gap between US and foreign targets is always positive and significant, after controlling for all the above country characteristics. The discount on offers for non-US targets is at least 4 percent of the firm pre-deal stock price. A 4 percent discount is equivalent to 4 million dollars for a target of median size, and 31.5 million for a target of average size in the sample.

Furthermore, the non-US premium discount is robust to potential issues related to differences in country characteristics between the target and the acquirer, as well as to potential benefits for non-US acquirers from buying US firms.

The paper contributes to the existing takeover literature on several fronts. Primarily, it provides a comparative analysis of the premium for US targets as opposed to non-US targets, and documents a significant discount in offers to firms outside the US. The discount is robust to important premium determinants established in the literature, including target, acquirer, and deal characteristics. The non-US premium discount persists even after controlling for characteristics of the target country such as legal investor protection, economic and financial market development, and latent competition in the market for control.

The paper also gives a comprehensive overview of takeover premium around the world based on a sample of about 8,000 transactions from 2000 to 2013 in 67 countries.

In addition, I revisit the relationship between takeover premium and investor protection, using updated measures of legal investor protection. Rossi and Volpin (2004) construct their shareholder protection measure based on the original anti-director right index (ADRI) by La Porta, Lopez-de Silanes, Shleifer, and Vishny (1998). As documented by Spamann (2010), the original ADRI necessitates adjustments, especially regarding the value for the US. This matters in the premium-shareholder protection relation analysis where the individual deal sample is used and US takeovers make up an important proportion of the sample. Indeed, after correcting for the index values and separating the US effect, I do not find evidence that investor protection significantly affects the premium. The finding holds for alternative measures of the legal quality.

The rest of the paper proceeds as follows. Section 1.2 describes the sample under study. Section 1.3 examines takeover premiums around the world and analyzes the non-US premium discount. Section 1.4 concludes the paper.

1.2 Data and descriptive statistics

1.2.1 The sample

I start with all mergers and acquisitions announced from January 1, 2000 to December 31, 2013 and completed as of June 30, 2014, from the S&P Capital IQ database. Since the analysis focuses on takeover premium, I restrict my attention to transactions with public targets and available offer prices. Listed firms are targeted in more than 30,000 transactions, or 7 percent of the deals recorded in Capital IQ. As I am interested in transactions resulting in changes in control, I keep only M&As where the acquirer owns less than 50 percent of the target stock before the deal and more than 50 percent after the deal. This reduces the sample to 15,846 takeovers, covering target firms domiciled in 111 countries. Of these, 8,778 transactions have an available offer price larger or equal to the target's stock price

one day prior to the deal announcement.

Based on the target one-month premium provided by Capital IQ, i.e., the percentage difference between the offer price and the target stock price one month prior to the acquisition announcement, I exclude transactions with a premium below the 1st percentile (-14.3%) or above the 99th percentile (246%) to reduce the risk of unusual premium due to data errors.[2] Further, I remove countries with fewer than three takeovers during the entire study period. The final sample consists of 8,473 takeovers, drawn from 67 countries.

For each transaction, I obtain (from Capital IQ) information on deal, acquirer, and target characteristics that are commonly found important for a premium analysis (Rossi and Volpin, 2004; Betton et al., 2008, 2014). Following recent cross-country studies (Rossi and Volpin, 2004; Alexandridis, Petmezas, and Travlos, 2010; Croci and Petmezas, 2010), I also construct country-level variables to proxy for the target country's economic strength, market development, and legal environment. Some of the sample firms are incorporated in a different country than where they base their headquarter (called primary location in Capital IQ). I match measures of economic strength and market development to transactions based on the country of the target's primary location, and match legal variables based on the target firm's country of incorporation. Table 1.1 describes all variable definitions and their sources.

[2]For some of the transactions with extreme (negative or positive) premiums, in a manual check I do not find their stock prices before the deal from other sources. I also notice some computation issues, e.g., in the acquisition of New Concept Energy. International Health Product Inc. acquired a total of 1.35 million shares for $7.3 million, of which $5.14 million is paid through indebtedness, and $2.15 million is in promissory note. The target stock price one month before the announcement is $5.2. Capital IQ uses $2.5 million to compute the offer price per share ($1.16), and thus a premium of -77 percent. Using the total value of $7.3 million would give an offer price of $5.4, and hence a premium of 3.8 percent.

1.2.2 Descriptive statistics

Table 1.2 reports descriptive statistics for takeover premiums by country in which the target firm is located. *Premium* is defined as the natural logarithm of the ratio of the offer price to the target's closing price one month before the transaction announcement. About half of the takeovers in the sample target US firms. The rank ordering of countries by premium is fairly similar using mean and median values.

I regress takeover premium on target country dummies, using heteroskedastic standard errors. The coefficients associated with the country dummies represent the country average premium, and are reported in table 1.3, specification (1). Takeover premiums are positive around the globe, and, in majority, highly significant. Takeover premiums across non-US markets average 35 percent with equal weighting, whereas the average US premium is 42 percent.[3]

In figure 1.1, I plot the country average premium against takeover activity for countries with takeover volume exceeding 20 percent. *Takeover volume* is defined as the percentage of traded firms that are targets in successful takeovers over the study period (Rossi and Volpin, 2004). In terms of activeness, the US leads in reallocation of control over corporate assets, with a volume almost three times larger than the non-US average. Other relatively active markets include Ireland, Norway, Canada, and Sweden. Premiums can vary across comparably active markets, e.g., France versus Italy, and similar premiums can be observed in markets with very different volumes, e.g., France and Norway.

As seen in figure 1.1, premiums around the world are mostly lower than in the US. In table 1.3 specification (2), I compare the premium in each country with the US average, after adjusting for differences in important observable deal, acquirer, and target features.

[3]Premium is computed as the exponential of the reported statistic minus one, since the variable in use is in logarithm form.

These relative adjusted premiums are computed as the estimates for the country dummies in an OLS regression where takeover premium is the dependent variable, and explanatory variables include target country dummies (except for the US), and a set of variables describing deal-level characteristics. All variables are defined in table 1.1. The results suggest that no markets have a significantly higher adjusted premium than the US.

Table 1.4 presents descriptive statistics for the variables used in the analysis. The sample is split by whether or not the target firm is located in the US. I test for differences in means with the *t* test and differences in medians with the Wilcoxon Rank-sum test (test statistics and significance levels are reported). Panel A shows statistics for deal-level continuous variables. For the full sample, the takeover premium averages around 39 percent, of which the majority is captured by *mark-up* (Schwert, 1996), i.e., the natural logarithm of the ratio of the offer price to the target's closing price one day before the deal announcement. Changes in the target's stock price over one month prior to the bid, as measured by the variable *run-up* (Schwert, 1996), appear relatively modest with an average of 6 percent and a median of 4 percent. The mean and the median difference tests suggest that US targets receive higher mark-ups and premiums but lower run-ups than non-US targets. *Target size*, measured by the target firm market capitalization one month before the announcement, is significantly larger in the US than in other countries.

Panel B reports the means of important binary variables. Of the sample takeovers, 62 percent target value stocks (*BM-high* (Betton et al., 2008)), 55 percent involve a listed acquiring firm (*public acquirer*), and 37 percent are *horizontal*, i.e., between firms from the same industry. Only 18 percent of the acquirers own shares in the target prior to the bid (*toehold* (Betton, Eckbo, and Thorburn, 2009)). Acquiring in groups, i.e., *club deal* (Officer, Ozbasb, and Sensoy, 2010) accounts for a modest 6 percent of the sample. Value targets, toehold, club deal, cross-border, all-cash paid transactions, and tender offers are more common in the non-US subsample than in the US. Meanwhile, the US subsample

contains more public acquirers, horizontal deals, and friendly and solicited bids.

Panels C and D summarize country-level variables, including measures of economic strength and market development (panel C), as well as legal variables (panel D). Compared with other countries, the US has a larger economy (GDP, GNP per capita), a more developed and liquid stock market (as shown by *market cap*, *turnover* and *value traded*) , and also a more active takeover market (as measured by *% firms targeted*). Legal investor protection is generally stronger in the US than the average of other countries included in the sample (except for the shareholder protection index). Table 1.5 shows the deal sample pairwise correlation coefficients for country-level variables and the US target indicator.

1.3 The non-US premium discount in global takeovers

The descriptive statistics discussed above suggest that the US market is distinct from other takeover markets. The adjusted premium is significantly larger in the US than in virtually all other countries (table 1.3, specification (2)). In this section, I first test for a systematic difference in takeover premium between US and non-US targets and then examine whether this difference is attributed to country variation in legal investor protection, market development, and expected economic growth.

Using the sample of individual deals, I estimate a baseline specification,

$$\text{Premium} = \alpha + \beta \text{US target} + C'\gamma + \varepsilon, \tag{1.1}$$

where premium is the natural logarithm of the ratio between the offer price and the target's closing price one month before the transaction announcement. US target takes value of one if the target is located in the US, and zero otherwise. C is a set of control variables describing the target, the acquirer, and the deal features. In particular, target characteristics

include the natural logarithm of the target size, the value-stock indicator (*BM-high*), run-up, and *52W-high*, i.e., the change in the target pre-deal stock price compared with the highest price in the 52 weeks preceding the offer (Baker, Pan, and Wurgler, 2012). Bidder-related controlling factors indicate whether the acquiring firm is listed, owns shares in the target when announcing the bid (*toehold*), is from the same industry as the target (*horizontal*), and forms a consortium to buy the target (*club-deal*). Deal characteristics include a group of indicator variables for cross-border, entirely-cash-paid, friendly, solicited transactions (Aktas et al., 2010), and tender offer. Finally, I also control for the target industry and common macro factors in the announcement year using a set of dummy variables. Standard errors are clustered at the target country level as observations within a country are likely to be correlated.

Table 1.6 presents the estimation results for the baseline specification and its variations.[4] As seen in column (1), US target firms earn a significantly higher premium than those in other countries. The premium difference between US and non-US takeovers approximates 7.3 percentage points, equivalent to 27 percent of the median takeover premium for non-US firms.[5] This is a substantial discount for non-US targets.

As known in the literature, and also shown in the sample, target stock prices typically rise before takeover bids. Offer premiums can be increasing in target run-ups, either due to a costly market feedback loop where bidders raise the offer price by the run-up (Schwert, 1996), or because of rational deal anticipation where the run-up embeds information on both the deal probability and the bid conditional synergies (Betton et al., 2014). Variation in stock market efficiency across countries may impact the target run-up, and consequently the takeover premium. Therefore, in columns (3) and (4), I replace the takeover premium with two alternative measures: the mark-up and the 42-day premium. The former measures

[4] I do not report coefficients associated with industry and year dummies.

[5] The premium differential stated hereinafter is in approximation since premiums used in the analysis are in logarithm form.

the offer price against the target's most recent stock price before the bid, whereas the latter accounts for the target price's movement over a much larger window.[6] The bid gap between US and non-US targets is 7 percent of the target stock price the day before the announcement, or 7.5 percent of the price 42 days earlier.[7] The results suggest the documented non-US discount is insensitive to the length of the window underlying the premium measure.

The coefficient estimates for control variables are generally consistent with prior research. The takeover premium decreases in target size (Rossi and Volpin, 2004; Fidrmuc, Roosenboom, Paap, and Teunissen, 2012)and increases in target run-up, but less than unity. Accordingly, the relationship between the mark-up and the run-up is negative with an estimated coefficient of -0.35 (table 1.6, column (3)). This implies a rejection of the costly feedback loop and is consistent with the findings in Betton et al. (2014). Firms with a book-to-market ratio exceeding their industry rivals receive a higher winning bid (Betton et al., 2008). The premium is lower for toehold bidders (Betton et al., 2008) and club deals (Officer et al., 2010), but higher for public bidders (Bargeron, Schlingemann, Stulz, and Zutter, 2008) and horizontal acquirers. Among the deal characteristics, determinants positively associated with premium include cross-border (Rossi and Volpin, 2004) and all-cash paid transactions (Betton et al., 2008), whereas friendly and solicited bids attract lower offers (Fich, Cai, and Tran, 2011; Fidrmuc et al., 2012).[8]

By comparing the estimation results in columns (1) and (2), we can see that the estimates for the control variables are essentially unaffected by the exclusion of the US target indicator. This suggests that the premium discount for non-US targets is unrelated to deal-level features. In the following analysis, I examine whether this discount can be

[6] Schwert (1996) shows that the target run-up starts around day -42, i.e., about two calendar months prior to the announcement.

[7] After controlling for the run-up, the difference between US and non-US targets in the mark-up is smaller than that in the premium.

[8] The solicited classification in CIQ relates very closely to target initiation of the deal.

explained by premium determinants at the country level.

1.3.1 Legal investor protection, market development, and takeover premium

1.3.1.1 Investor protection

In a growing literature exploring cross-country variation in legal rules, the role of minority shareholder rights in resource allocation has received considerable attention. Recent studies find that strong shareholder protection is associated with more efficient capital allocation (Wurgler, 2000) and greater investment sensitivity to growth opportunities (McLean et al., 2012). The market for corporate control, an important mechanism in reallocating corporate assets and managerial talent, is more active in countries with better protection of outside investors (Rossi and Volpin, 2004). Burkart, Gromb, Mueller, and Panunzi (2014) incorporate legal investor protection into a standard takeover model and show that the bid price increases with the quality of shareholder protection. Apparently, strong investor rights limit the ability of the acquirer, once in control, to extract private benefits at the expense of other shareholders. This results in an increase in the target post-takeover value and, consequently, by the free-rider condition (Grossman and Hart, 1980), transferring into a higher premium.[9] Empirical evidence supports the negative relationship between shareholder protection and private benefits of control (Nenova, 2003; Dyck and Zingales, 2004). Rossi and Volpin (2004) find that shareholder protection is positively related to takeover premium, though the result is driven by target firms in the UK and the US.

While Rossi and Volpin (2004) set the pace for incorporating investor protection in M&A studies, they base a legal proxy on the original anti-director right index (ADRI) by La Porta et al. (1998), the accuracy of which is subject to criticism (Spamann, 2010). Spa-

[9] The free-rider condition means that atomistic shareholders do not tender unless the offered price matches the post-takeover share value.

mann (2010) also demonstrates the breakdown of several influential empirical findings after correcting for the ADRI values. Hence, I re-examine the relationship between takeover premium and investor protection, using updated measures of legal investor protection. I construct a shareholder right index in the manner of Rossi and Volpin (2004), i.e., an ADRI multiplied by a rule of law index (La Porta et al., 1998) and divided by ten, using the Spamann (2010) revised ADRI.[10] This measure captures the effective rights of minority shareholders with respect to managers and directors. In addition, I employ four other proxies for the legal quality of investor protection: the anti-self-dealing index and the revised ADRI from Djankov et al. (2008), and the takeover law and anti-takeover indices from Nenova (2006). With each of these five measures, a higher value implies a more investor-friendly legal environment. The anti-self-dealing index specifically addresses how the law deals with the strength of minority shareholder protection against tunneling by the controlling shareholder. The index could be of particular relevance for cross-country studies of takeovers since asset tunneling underlies post-takeover dilution. The index is available for 72 countries, while the Spamann (2010) ADRI, and hence the shareholder right index, is available for 46 countries. The takeover law and anti-takeover indices directly address M&A regulations and are available for 46 countries.

1.3.1.2 Market development and growth

Croci and Petmezas (2010) study M&As in which large shareholders increase their ownership stakes, and find that target minority shareholders gain more in countries with better stock market development. In general, takeover premiums may depend on the level of economic and financial development of a country for multiple reasons. First, the availability of funding in the capital market can affect the demand for takeovers, and hence the price. Second, low financial and economic development makes it more costly for

[10]Spamann (2010) provides two corrected ADRIs, one based on 1997 data and the other on the law in force on January 1, 2005. The two indices have a correlation coefficient of 0.86. The index with 2005 values is used in this paper. The results reported and discussed herein are insensitive to the use of the 1997 values, and revised ADRI from Djankov et al. (2008), in place of the Spamann (2010) ADRI 2005 values.

firms to adopt good governance (Doidge et al., 2007), which may in turn translate into a discount in the selling price. Third, a larger economy could imply a larger product market and greater economies of scale benefits. This increases takeover synergies, i.e., the value created by takeovers, and thus premiums. In addition, expectations on economic growth can also impact firms' prospects for growth, and hence acquirers' willingness to pay.

Among the sample countries, the US stands out in terms of economic strength, financial market development (table 1.4, panel C), and takeover activities (figure 1.1). Therefore, I test whether country variation in economic and financial market development can explain the non-US premium discount. I use log GDP to proxy for the size of the economy, lagged GDP growth, and stock market return to measure growth expectation. Following Levine and Zervos (1998) and Croci and Petmezas (2010), I measure the stock market development with market capitalization, stock value traded over GDP, and stock turnover. Capitalization measures the size of the stock market while value traded and turnover measure the market liquidity. To proxy for latent competition in the takeover market, I construct a measure similar to the liquidity index by Schlingemann et al. (2002). *Competition* equals the value of corporate control transactions relative to the market value of listed firms in each target country.[11] This measure captures the intensity of inter-corporate control transactions at the country level. In the regressions, I use the competition index for the year before the deal announcement, since a contemporaneous index could be endogenous to bid premium, and a poor proxy for competition if the transaction is announced in the beginning of the year and thus precedes many of the deals used in computing the index (Aktas et al., 2010).

[11] The original liquidity index is the ratio of the value of corporate control transactions during a year to the aggregate book value of assets of firms in each two-digit SIC code, and measures latent competition at the industry level.

1.3.1.3 Results

I match the data on legal investor protection to each takeover transaction based on the target's country of incorporation, and data on market development to transaction using the country where the target is located. Then, I regress the premium on the shareholder protection index and all deal-level control variables (the vector C) used in the baseline specification (1.1). As seen in table 1.7, column (1), the estimated coefficient for the legal variable is significant but negative. The contrast between this result and that in Rossi and Volpin (2004) hinges on the ADRI in use. The correlation between the Spamann (2010) ADRI and the original ADRI is only 0.41 (Spamann, 2010). Furthermore, the original index gives the US a value of five, whereas it is only two according to the Spamann (2010) index. This difference alters the US rank compared with other countries, and plays an important role in the premium-shareholder protection relationship analysis using the individual deal sample, since a large proportion of the deals target US firms. I add to the regression the US target indicator variable in column (2), and then market development measures in column (3). Shareholder protection becomes insignificant after singling out the US effect. Meanwhile, the premium discount for non-US targets is consistently significant across specifications, ranging from 7 percent to 9 percent of the target pre-deal stock price.

Changes in the estimation results for the premium–investor protection relationship, with and without the US target indicator, can be explained with the high sample correlation (-0.8) between the US dummy and the shareholder protection index (table 1.5). Since some countries have the same or similar index value as the US, I test for the premium-investor protection relationship using other countries in the sample than the US. The results, reported in table 1.7 column (4), are consistent with those in column (3). The findings provide two implications. First, the documented non-US discount is not explained by the extent of legal investor protection captured in the measure employed. Second, cross-sectional estimates of the shareholder protection impact on premium might be misleading without

controlling for US targets.

I use alternative measures of the legal quality of investor protection and re-estimate the specification with the US target indicator and market variables as in table 1.7 column (3). The results are reported in table 1.8. None of the legal measures have a significant effect on the takeover premium.

In the baseline specification (table 1.6 column (1)), US targets receive a 7 percent higher premium than their foreign counterparts. After controlling for various country characteristics (table 1.8), the non-US premium discount estimate ranges from 4 to 7 percent. The drop in the discount is attributed to measures of economic and market development, and appears sensitive to the countries included. The US target indicator and log GDP have a correlation coefficient of 0.8 (table 1.5), which consequently affects the statistical significance of both variables.

Table 1.9 shows the sensitivity of the non-US premium discount to measures of economic and market development.[12] Among these market proxies, the size of the economy, as measured by log GDP, is the most robust premium determinant and also has the strongest impact on the discount magnitude. Nevertheless, the premium gap between US and foreign targets is always positive and significant. The discount on offers for non-US targets is at least 4 percent of the firm's pre-deal stock price. A 4 percent discount is equivalent to 4 million dollars for a target of median size and 31.5 million for a firm of average size in the sample.

[12] I use the anti-self-dealing index as the legal proxy, since this allows for the largest numbers of countries and yields the most conservative estimate for the premium discount, as shown in table 1.8.

1.3.2 The role of foreign acquirers

The analysis so far has taken into account country characteristics for the target firm. However, differences in country-level governance between the target and the acquirer can also influence the takeover premium. Bris and Cabolis (2008) find that the premium is higher when there is stronger shareholder protection in the acquirer's than in the target's country, but not vice versa, i.e., the premium is not lower when the protection is weaker in the acquirer's than in the target's country. Doidge (2004), Doidge, Karolyi, and Stulz (2004), and Doidge, Karolyi, and Stulz (2009) argue that US cross-listing reduces the private benefit of control, making foreign firms worth more than their domestic counterparts. Such disciplinary effect may also apply to foreign firms that merge with or partially acquire US firms. Indeed, Martynova and Renneboog (2008b) find support for the hypothesis that poor-governance bidders voluntarily bootstrap to the better-governance standards of the target in cross-border partial takeovers. In addition to governance, buying US firms can benefit non-US acquirers by providing access to the world's most developed capital market. US exposure might also be valuable for foreign firms through transfer of productivity, growth, and trade. Forbes (2010) notes considerable gross capital flows into the US though foreigners investing in the US earn less than half of what US investors earn abroad. Testing for non-return-related factors that explain foreign investment in the US, the author finds that countries investing more in the US are those with less developed financial market, more trade with the US, fewer capital controls, and better corporate governance systems.

In order to test whether foreign acquirers contribute to the premium gap between US and non-US targets, I add to the premium estimation an interaction term between the US target indicator and the cross-border dummy. The variable equals one when non-US acquirers take over US firms. A positive coefficient implies that non-US acquirers pay more for targets in the US than for those in other foreign countries, and the non-US premium discount is larger in cross-border transactions than in domestic deals. As seen

in table 1.10, column (2), the interaction term is negative and insignificant, ruling out non-US acquirers as an explanation for the premium discount. Furthermore, column (3) provides the premium estimation results using only domestic takeovers. These results are free from problems associated with the US attractiveness to non-US bidders, as well as from differences in country characteristics between the target and the acquirer. Focusing on domestic transactions turns out to increase the non-US premium discount.

1.3.3 Robustness check

As M&As have become global only since the late 1990s (Martynova and Renneboog, 2011), it is possible that the Capital IQ coverage for non-US countries is not as good as for the US, especially for small firms. Given that the takeover bid decreases in target size, this might bias upward the non-US premium discount as targets outside the US are generally large firms. To address this concern, I divide the sample into four groups according to target size: (i) below the 25th percentile, (ii) between the 25th and 50th, (iii) between the 50th and 75th, and (iv) above the 75th percentile. I allow for the non-US discount to vary across different size groups, i.e., I include dummy variables indicating different size groups and their interactions with the US target variable in the premium estimation. The results are reported in table 1.11. The non-US premium discount is positive across all size groups and insignificant for only firms in group (iii), i.e., between the second quartile and the upper quartile.

1.4 Conclusion and discussion

In a systematic comparison of takeover premiums between the US and other countries, I document a substantial and statistically significant price discount in transactions targeting non-US firms. Controlling for deal-level determinants, the bid difference between US

and non-US targets approximates 7 percent of the target's traded price one month before the announcement, equivalent to 27 percent of the median takeover premium for targets outside the US. The non-US discount persists at 4 percent of the target pre-deal stock price, even after further controlling for country variation in legal investor protection, economic strength, financial market development, and latent competition in the market for corporate control. Of the included country proxies, only the size of the economy in the target country can partially explain the non-US premium discount.

Though the magnitude of the non-US discount decreases with the inclusion of log GDP in the premium estimation, the high correlation in sample between log GDP and the US target indicator makes it difficult to disentangle the economies of scale effect from other characteristics exclusive to the US. Furthermore, a significant proportion of the non-US premium discount is yet unexplained.

In terms of regulating takeovers, the US system gives both acquirers and targets greater flexibility in comparison with the typical international setting. In the European Union, for instance, the acquirer must make a bid for all the outstanding shares of a corporation after reaching an ownership threshold (known as the mandatory bid rule), and the target board of directors may not take any actions to frustrate the bid unless authorized by the shareholders (Nenova, 2006). However, in the US, the mandatory bid rule is virtually non-existent, and a range of defensive actions against an offer are permitted (Betton et al., 2008), including poison pills, staggered boards, and sophisticated anti-takeover devices rarely found anywhere else outside the US (Nenova, 2006). The Nenova (2006) anti-takeover index focuses on the most common defensive mechanisms and thus omits the US exclusive devices. As a result, the takeover law and anti-takeover indices used in the present paper do not fully capture differences in takeover regulations between the US legal system and other countries, and these differences may influence the non-US premium discount.

Burkart and Panunzi (2004) examine the double-sided effect of the mandatory bid rule. On the one hand, it prevents inefficient control transfers. On the other hand, it may frustrate an efficient takeover if the obligation to make a bid for all shareholders drives the total acquisition price beyond the bidder's willingness-to-pay, particularly when the bidder is unable to extract large private benefits. Higher acquisition costs brought by mandatory offers may hinder low-premium takeovers, and thus only high-premium bids succeed, implying a positive association between the rule and the offer price. Bergström, Högfeldt, and Molin (1997) show that the effect of the rule on the winning bid could be zero, positive, or negative depending on the relation between the contestant difference in security benefits and their reserved discrepancy in private benefits; unless the difference in contestant private benefits is large, target shareholders encounter a wealth loss from banning restricted bids.

Regarding the US takeover market, despite the absence of a legal requirement to bid for all outstanding shares, it is common in practice for a raider to make an offer for all shares (Magnuson, 2009). In the current sample, full acquisitions comprise 90 percent of takeovers targeting US firms. In terms of price regulation, the Williams Act mandates acquirers to offer the same per share price to all tendering shareholders. Fair price provisions, which require a bidder to pay the same price to the minority as the highest price paid for the shares in the recent past, are imposed by statute in 27 states and by charter in 40 percent of the Fortune 500 companies (Nenova, 2006). Therefore, US takeovers tend to be subject to similar conditions under the mandatory bid rule.

Burkart and Panunzi (2006) provide a review of the literature on anti-takeover provisions. Under the entrenchment hypothesis, defensive measures are detrimental because they increase takeover costs, discourage efficient reallocation of control over corporate assets, and thus weaken the market's disciplinary force. A competing hypothesis favors takeover defenses since they permit more efficient contracting with the manager, prevent

coercive bids, strengthen the target's bargaining power, promote competition among bidders, and protect managers and firms from the disruptive effects of takeovers. Empirical evidence is, however, too inconclusive to draw general or strong conclusions as to which hypothesis dominates.

The relationship between firm-specific takeover defenses and control the premium also receives mixed evidence. Comment and Schwert (1995) and Heron and Lie (2006) show that targets adopting poison pills receive a higher premium. However, some other recent studies find that premium is unaffected by classified boards (Bates, Becher, and Lemmon, 2008), the presence of poison pills, and target hostility to the initial bid (Betton et al., 2008).

Even though we do not observe a positive impact of poison pill provisions on the premium, having the option to adopt these provisions may pose a threat to potential bidders, and hence motivate an offer large enough to prevent a possible defensive response by the target board. If so, the existence of poison pills and similar US exclusive takeover defenses may justify the premium difference between US and non-US takeovers.

Since the premium can signal about the takeover synergies and/or the relative bargaining power of the target, an analysis of takeover gains and gain division could add information about the underlying sources of the non-US premium discount. The size of the economy and defensive mechanisms, while both positively related to the premium, imply two different channels. The size of the economy is related to takeover synergies whereas anti-takeover measures can strengthen the target bargaining position.

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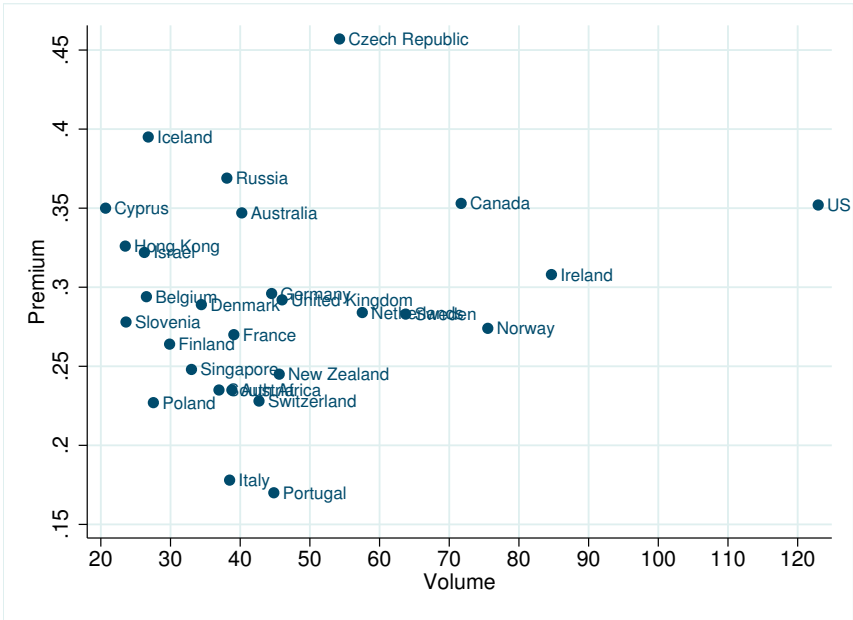

Figure 1.1: Average premium and takeover activity, by country

Premium is the natural logarithm of the ratio of the offer price to the target's closing price one month before the transaction announcement. Volume is the percentage of traded firms that are targets in successful takeovers over the study period

Table 1.1: Variable description and sources

Panel A. Individual deal-level variables

Variable	Description
Premium	Natural logarithm of the ratio of the final offer price to the target's closing price one month (P_{-30}) before the transaction announcement.
42-day premium	Natural logarithm of the ratio of the final offer price to the target's closing price 42 trading days (P_{-42}) before the transaction announcement.
Mark-up	Natural logarithm of the ratio between the final offer price to the target's closing price one day (P_{-1}) before the transaction announcement.
Run-up	Change in the target stock price in the one month period before the bid announcement, measured as $ln(P_{-1}/P_{-30})$.
42-day run-up	Change in the target stock price over the 42 trading days before the bid announcement, measured as $ln(P_{-2}/P_{-42})$.
US target	Equals one if the target is located in the United States, and zero otherwise.
Target size	Target's market capitalisation one month before the announcement, in million US dollars.
BM high	Equals one if the target's book-to-market exceeds the industry median. Industry median is computed based on all firms targeted in the same industry (4-digit SIC code) in the same country.
52W-high	Change in the target pre-deal stock price compared with its highest price in the preceding 52 weeks period, measured as $P_{-1}/P_{52\text{W-high}} * 10^{-4}$.
Public aquirer	Equals one if the acquirer is listed, and zero otherwise.
Toehold	Equals one if the acquirer owns shares in the target when announcing the bid.
Horizontal	Equals one if the transaction is made by acquirers from the same (3-digit SIC code) industry as the target.

Continued on next page...

... table 1.1 continued

Variable	Description
Club-deal	Equals one if the transaction involves more than one acquirer, and zero otherwise.
Cross-border	Equals one if the transaction is classified as cross-border, and zero otherwise.
All cash	Equals one if the transaction is entirely paid in cash, and zero otherwise.
Friendly	Equals one if the transaction is classified as friendly, and zero otherwise.
Solicited bid	Equals one if the transaction is solicited by the target, and zero otherwise.
Tender offer	Equals one if the transaction is done through a tender offer, and zero otherwise.
Industry	Classified based on 2-digit SIC codes of the target, as follows: **01 - 09** Agriculture, forestry and fishing; **10 - 14** Mining; **15 - 17** Constructions; **20 - 39** Manufacturing; **40 - 49** Transportation & public utilities; **50 - 51** Wholesale trade; **52 - 59** Retail trade; **60 - 67** Finance, insurance & real estate; **70 - 89** Services.

Panel B. Country-level variables

Variable	Description
Ln GNP	Natural logarithm of GNP per capita in the target country in the year before the deal.
Ln GDP	Natural logarithm of gross domestic product in the target country in the year before the deal.
Market cap	Ratio of the value of listed domestic shares in the target country in the year before the deal to the country's GDP.

Continued on next page...

... table 1.1 continued

Variable	Description
Value traded	Ratio of the value of the trades of domestic shares on domestic exchanges in the target country in the year before the deal to the country's GDP.
Turnover	Ratio of the value of the trades of domestic shares on domestic exchanges in the target country in the year before the deal to the country's stock market capitlization.
% listed firms targeted	Proportion of domestic listed firms targeted in completing deals in the target country in the year before the deal.
Competition	Ratio of the total value of corporate control transactions in the year before the deal to the target country's market capitalisation.
Spamann ADRI	Spamann's (2010) corrected estimates of the original anti-director right index (ADRI) by La Porta et al. (1998) (LLSV).
Anti-director right	Revised estimates of the La Porta et al. (1998) (LLSV)'s anti-director right index (ADRI). The index is formed by adding one when (i) the country allows shareholders to mail their proxy vote to the firm, (ii) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (iii) cumulative voting or proportional representation of minorities in the board of directors is allowed, (iv) an oppressed minorities mechanism is in place, (v) the minimum percentage of share capital that entitles a shareholders to call for an extraordinary shareholders' meeting is less than or equal to 10% (the sample median), or (vi) shareholders have preemptive rights that can be waived only by a shareholders' vote.
Shareholder protection	Shareholder protection index à la Rossi and Volpin (2004), using the Spamann corrected ADRI instead of the original LLSV ADRI. The index is defined as an ADRI multiplied by a rule of law index (La Porta et al., 1998) and divided by ten.

Continued on next page...

... table 1.1 continued

Variable	Description
Anti-self-dealing	Average of ex-ante (capturing approval requirements and immediate disclosures) and ex-post (on ex post disclosure and the ease of proving wrongdoing) private control of self-dealing. The index specifically addresses the regulation of a transaction between two firms controlled by the same person that has the potential to improperly enrich the person in control. The higher the index, the more tightly self-dealing transactions are regulated, and thus, the better outside investors are protected.
Takeover law	Average of twelve index components characterizing takeover laws, including: mandatory offer range, range where intention to control is known, range where intention to take private is known, off-exchange price disclosed, rules apply to non-listed firms, fair price for minority, fair price for all classes, offer disclosure index, fair price for non-tendering investors, appraisal rights after a merger, sell-out provisions, and anti-takeover tactics.
Anti-takeover	The average of (i) 1 if it is forbidden by law to issue shares during a tender offer or if shareholder approval is needed, 0 otherwise; (ii) 1 if it is forbidden by law to sell major assets during a tender offer or if shareholders' approval is needed, 0 otherwise; (iii) 1 if it is forbidden by law to use voting caps, 0 otherwise; (iv) 1 if is forbidden by law to restrict share transferability , 0 otherwise ; (v) 1 if it is forbidden by law to use golden shares , 0 otherwise; (vi) 1 if shareholder' agreements are not frequently used, 0 otherwise; (vii) 1 if at least two of the following three mechanism are not frequently used among listed companies: multiple classes of shares, pyramid ownership, cross-shareholding ownership structures, 0 otherwise.
Tax	Top rate on capital gains for long-term corporate equity in the target country of incorporation.

Data sources: All individual deal-level variables are obtained from S&P Capital IQ. Numbers of domestic listed firms, GNP per capita, stock market capitalisation, GDP and value of stock traded are obtained from World Development Indicators (World Bank database). The anti-self-dealing and anti-director right indices are from Djankov et al. (2008). The Spamann ADRI is from Spamann (2010). The takeover law and anti-takeover indices are from Nenova (2006).

Table 1.2: Descriptive statistics of takeover premium, at country level

Target Countries	N	Mean	Median	SD	Min	Max
Argentina	7	0.37	0.36	0.18	0.19	0.69
Australia	430	0.35	0.30	0.24	-0.13	1.18
Austria	20	0.24	0.17	0.24	-0.04	0.83
Bahamas	3	0.36	0.43	0.15	0.18	0.46
Belgium	34	0.29	0.21	0.25	0.01	0.96
Bermuda	20	0.28	0.27	0.14	0.10	0.53
Brazil	30	0.34	0.29	0.24	-0.02	1.13
British Virgin Islands	3	0.15	0.16	0.28	-0.13	0.43
Bulgaria	5	0.66	0.61	0.36	0.21	1.22
Canada	1088	0.35	0.31	0.25	-0.15	1.23
Cayman Islands	5	0.17	0.26	0.21	-0.13	0.36
Channel Islands	19	0.26	0.23	0.24	-0.02	1.07
Chile	15	0.35	0.35	0.19	0.03	0.69
China	63	0.31	0.24	0.25	-0.15	1.24
Colombia	8	0.43	0.28	0.39	0.01	0.96
Croatia	7	0.45	0.34	0.45	-0.15	1.09
Cyprus	19	0.35	0.34	0.26	0.01	0.81
Czech Republic	13	0.46	0.41	0.35	0.08	1.13
Denmark	35	0.29	0.22	0.24	-0.01	1.22
Egypt	14	0.43	0.46	0.37	-0.13	1.00
Finland	28	0.26	0.25	0.18	-0.04	0.74
France	184	0.27	0.21	0.24	-0.11	1.21
Germany	125	0.30	0.23	0.22	-0.15	1.08
Greece	26	0.19	0.15	0.25	-0.14	1.14
Hong Kong	85	0.33	0.31	0.22	-0.11	1.19
Hungary	8	0.12	0.07	0.13	0.01	0.42
Iceland	5	0.39	0.33	0.28	0.15	0.84
India	125	0.34	0.29	0.30	-0.11	1.23
Indonesia	26	0.26	0.17	0.25	0.02	1.04
Ireland	37	0.31	0.22	0.24	-0.00	1.03
Israel	96	0.32	0.25	0.24	0.01	1.10

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... table 1.2 continued

Target Countries	N	Mean	Median	SD	Min	Max
Italy	58	0.18	0.11	0.17	-0.00	0.94
Jamaica	4	0.16	0.13	0.14	0.04	0.36
Japan	419	0.32	0.28	0.25	-0.09	1.23
Jordan	5	0.20	0.13	0.13	0.08	0.34
Kuwait	9	0.25	0.18	0.15	0.03	0.46
Lithuania	5	0.20	0.08	0.21	0.05	0.54
Luxembourg	9	0.42	0.40	0.29	0.06	0.85
Malaysia	116	0.21	0.15	0.19	-0.08	0.86
Mexico	12	0.27	0.22	0.20	0.02	0.82
Netherlands	72	0.28	0.25	0.21	-0.07	0.87
New Zealand	36	0.25	0.21	0.22	-0.11	0.99
Nigeria	5	0.42	0.46	0.25	0.15	0.78
Norway	92	0.27	0.26	0.19	-0.11	1.02
Pakistan	19	0.49	0.42	0.34	0.08	1.24
Peru	7	0.40	0.16	0.31	0.15	0.85
Philippines	10	0.22	0.24	0.19	-0.06	0.48
Poland	49	0.23	0.17	0.21	-0.02	1.01
Portugal	9	0.17	0.10	0.15	0.04	0.44
Romania	7	0.39	0.21	0.40	-0.00	1.05
Russia	21	0.37	0.24	0.33	-0.00	1.12
Serbia	4	0.48	0.37	0.50	0.02	1.18
Singapore	103	0.25	0.20	0.19	-0.10	0.96
Slovenia	14	0.28	0.24	0.23	0.00	0.71
South Africa	83	0.23	0.22	0.19	-0.07	1.14
South Korea	43	0.36	0.35	0.26	-0.04	1.07
Spain	40	0.20	0.18	0.16	0.00	0.60
Sri Lanka	8	0.45	0.31	0.39	0.00	0.96
Sweden	123	0.28	0.25	0.22	-0.09	1.24
Switzerland	54	0.23	0.19	0.17	-0.02	0.60
Taiwan	49	0.22	0.22	0.19	-0.15	0.81
Thailand	51	0.27	0.17	0.26	0.03	1.17
Turkey	17	0.33	0.30	0.30	-0.01	0.86

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... table 1.2 continued

Target Countries	N	Mean	Median	SD	Min	Max
United Arab Emirates	5	0.34	0.20	0.22	0.18	0.63
United Kingdom	731	0.29	0.26	0.22	-0.14	1.20
United States	3594	0.35	0.31	0.24	-0.15	1.24
Vietnam	7	0.14	0.19	0.17	-0.11	0.36
Full sample	8473	0.33	0.28	0.24	-0.15	1.24

This table presents descriptive statistics by target country on premiums in 8,473 transfers of control. The premium is the natural logarithm of the ratio between the final offer price and the target's closing price one month before the transaction announcement.

Table 1.3: Takeover premium, by target country

Independent Variables	Dependent Variable: Takeover Premium			
	(1)		(2)	
	coef.	s.e.	coef.	s.e.
Ln target size			−0.032***	(0.002)
BM high			0.045***	(0.005)
Run-up			0.612***	(0.020)
52W-high			−1.356	(1.278)
Public acquirer			0.017***	(0.006)
Toehold			−0.025***	(0.007)
Horizontal			0.011**	(0.005)
Club-deal			−0.033***	(0.009)
Cross-border			0.038***	(0.006)
All cash			0.017***	(0.006)
Friendly			−0.069***	(0.019)
Solicited bid			−0.024***	(0.008)
Tender offer			0.023***	(0.005)
Argentina	0.373***	(0.063)	−0.040	(0.076)
Australia	0.347***	(0.011)	−0.044***	(0.011)
Austria	0.235***	(0.052)	−0.207***	(0.037)
Bahamas	0.357***	(0.073)	−0.065***	(0.008)
Belgium	0.294***	(0.042)	−0.073**	(0.032)
Bermuda	0.283***	(0.030)	−0.069**	(0.033)
Brazil	0.337***	(0.043)	0.001	(0.047)
British Virgin Islands	0.154	(0.133)	−0.340***	(0.057)
Bulgaria	0.658***	(0.146)	0.088	(0.090)
Canada	0.353***	(0.008)	−0.042***	(0.008)
Cayman Islands	0.167*	(0.086)	−0.108	(0.099)
Channel Islands	0.261***	(0.054)	−0.107*	(0.058)
Chile	0.348***	(0.048)	0.001	(0.032)
China	0.310***	(0.031)	−0.046	(0.029)
Colombia	0.430***	(0.128)	−0.195***	(0.040)
Croatia	0.452***	(0.159)	−0.179*	(0.100)
Cyprus	0.350***	(0.058)	−0.094*	(0.049)

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... table 1.3 continued

Independent Variables	Dependent Variable: Takeover Premium			
	(1)		(2)	
	coef.	s.e.	coef.	s.e.
Czech Republic	0.457***	(0.092)	0.083	(0.101)
Denmark	0.289***	(0.041)	−0.088**	(0.034)
Egypt	0.429***	(0.096)	−0.055	(0.109)
Finland	0.264***	(0.034)	−0.089**	(0.042)
France	0.270***	(0.017)	−0.117***	(0.015)
Germany	0.296***	(0.020)	−0.100***	(0.017)
Greece	0.195***	(0.048)	−0.131***	(0.042)
Hong Kong	0.326***	(0.024)	−0.073***	(0.023)
Hungary	0.116***	(0.044)	−0.276***	(0.036)
Iceland	0.395***	(0.113)	0.096	(0.147)
India	0.338***	(0.026)	−0.083**	(0.037)
Indonesia	0.259***	(0.047)	−0.177***	(0.034)
Ireland	0.308***	(0.039)	−0.070**	(0.035)
Israel	0.322***	(0.025)	−0.059**	(0.027)
Italy	0.178***	(0.022)	−0.159***	(0.024)
Jamaica	0.162***	(0.059)	−0.290***	(0.038)
Japan	0.324***	(0.012)	−0.027**	(0.013)
Jordan	0.196***	(0.054)	−0.182***	(0.014)
Kuwait	0.249***	(0.048)	−0.050	(0.067)
Lithuania	0.195**	(0.082)	−0.190***	(0.041)
Luxembourg	0.415***	(0.091)	−0.033	(0.083)
Malaysia	0.214***	(0.018)	−0.180***	(0.015)
Mexico	0.269***	(0.056)	−0.074*	(0.040)
Netherlands	0.284***	(0.024)	−0.065***	(0.023)
New Zealand	0.245***	(0.037)	−0.185***	(0.025)
Nigeria	0.420***	(0.099)	−0.152***	(0.015)
Norway	0.274***	(0.020)	−0.083***	(0.024)
Pakistan	0.488***	(0.077)	0.039	(0.087)
Peru	0.400***	(0.110)	0.141	(0.220)
Philippines	0.217***	(0.056)	−0.105	(0.083)
Poland	0.227***	(0.030)	−0.162***	(0.029)
Portugal	0.170***	(0.046)	−0.207***	(0.030)

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... table 1.3 continued

Independent Variables	Dependent Variable: Takeover Premium			
	(1)		(2)	
	coef.	s.e.	coef.	s.e.
Romania	0.390***	(0.139)	−0.050***	(0.008)
Russia	0.369***	(0.071)	0.074	(0.097)
Serbia	0.484**	(0.216)	–	–
Singapore	0.248***	(0.019)	−0.137***	(0.017)
Slovenia	0.278***	(0.059)	−0.075	(0.061)
South Africa	0.235***	(0.020)	−0.131***	(0.019)
South Korea	0.360***	(0.040)	0.003	(0.046)
Spain	0.204***	(0.026)	−0.085***	(0.028)
Sri Lanka	0.448***	(0.131)	−0.284***	(0.043)
Sweden	0.283***	(0.020)	−0.102***	(0.018)
Switzerland	0.228***	(0.023)	−0.124***	(0.023)
Taiwan	0.225***	(0.027)	−0.137***	(0.025)
Thailand	0.273***	(0.036)	−0.140***	(0.029)
Turkey	0.327***	(0.070)	−0.020	(0.070)
United Arab Emirates	0.338***	(0.087)	−0.051	(0.044)
United Kingdom	0.292***	(0.008)	−0.108***	(0.008)
Vietnam	0.142**	(0.061)	−0.302***	(0.042)
United States	0.352***	(0.004)		
Constant			0.502***	(0.023)
Observations	8,473		7,399	
Adjusted R-squared	0.660		0.317	

The dependent variable is takeover premium, computed as the natural logarithm of the ratio between the final offer price and the target's closing price one month before the transaction announcement. All regressions include country fixed effects. Serbia is removed from specification (2) due to no available data on *BM high*. Other variable definitions can be found in table 1.1. All regressions are estimated using OLS. Robust standard errors are in parentheses. ***, **, and * denote significance level at 1%, 5%, and 10%, respectively.

Table 1.4: Descriptive statistics

Panel A. Deal-level characteristics, continuous variables

Variable	Total		Non-US		US		Difference	
	Mean	Median	Mean	Median	Mean	Median	t-test	Rank-sum test
Premium	0.327	0.284	0.309	0.264	0.352	0.305	-8.187^{***}	-9.645^{***}
Mark-up	0.275	0.223	0.254	0.193	0.304	0.258	-10.014^{***}	-13.424^{***}
Run-up	0.056	0.036	0.059	0.041	0.051	0.032	2.309^{**}	2.569^{**}
Target size ($mm)[a]	787	107	631	88	998	140	-9.953^{***}	-9.473^{***}
52W-high	0.01	0.01	0.008	0.008	0.007	0.008	2.042^{**}	3.230^{***}

Panel B. Deal-level characteristics, binary variables

Variable	Proportion			Difference
	Total	Non-US	US	t-test
BM high	0.616	0.681	0.532	13.705^{***}
Public acquirer	0.553	0.503	0.621	-10.934^{***}
Toehold	0.182	0.278	0.052	30.575^{***}
Horizontal	0.374	0.314	0.456	-13.310^{***}
Club-deal	0.056	0.065	0.043	4.528^{***}
Cross-border	0.262	0.359	0.132	25.553^{***}
All cash	0.657	0.691	0.610	7.673^{***}
Friendly	0.984	0.978	0.993	-5.811^{***}
Solicited bid	0.093	0.075	0.118	-6.609^{***}
Tender offer	0.391	0.525	0.210	31.937^{***}

Panel C. Economic strength and market development

Variable	Total		Non-US		US		Difference	
	Mean	Median	Mean	Median	Mean	Median	t-test	Rank-sum test
GNP/capita ($mm)[a]	38,253	39,950	33,721	37,610	44,186	46,350	-36.645^{***}	-37.057^{***}
GDP ($mm)[a]	6.242	2.549	1.459	1.128	12.641	13.094	-4.500^{***}	-78.567^{***}
GDP growth	2.659	2.666	2.807	2.653	2.460	2.666	6.725^{***}	3.215^{***}
Market return	0.047	0.102	0.060	0.123	0.031	0.084	5.393^{***}	12.545^{***}
Market cap	1.181	1.239	1.096	1.085	1.294	1.304	-19.5627^{***}	-28.834^{***}
Valued traded	1.551	1.351	1.002	0.866	2.283	2.036	-76.238^{***}	-67.666^{***}
Turnover	1.351	1.235	0.943	0.847	1.854	1.828	-65.758^{***}	-61.607^{***}
Competition	0.064	0.062	0.064	0.057	0.063	0.062	1.133	-6.938^{***}
% listed firms targeted	0.061	0.062	0.036	0.033	0.093	0.092	-75.857^{***}	-74.345^{***}

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... table 1.4 continued

Panel D. Legal variables[b]

Variable	Total		Non-US	US	Difference
	N countries	Mean	Mean		*t*-test
Shareholder protection	42	2.943	2.966	2.000	5.239***
Anti-self-dealing	56	0.483	0.480	0.654	−5.403***
Takeover law	42	0.530	0.525	0.760	−6.892***
Anti-takeover	42	0.435	0.428	0.710	−6.790***
Tax[c]	37	0.150	0.147	0.167	−0.994

This table presents descriptive statistics for the variables used in the analysis. The sample is split by whether or not the target firm is located in the US. I test for differences in means with the *t*-test and differences in medians with the Wilcoxon Rank-sum test; test statistics and significance levels are reported. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Measures of economic strength and market development are matched with transactions based on the country where the target firm is located. Legal variables are matched with transactions based on the target firm's country of incorporation. All variables are defined in table 1.1.

[a] Mean differences are tested on the natural logarithm of these variables.

[b] These variables are averaged at the country level for all countries, and all non-US countries included in the sample. The *t*-test tests whether the means for the non-US subsample equals the index value for the US.

[c] Tax rate is first averaged over the study period for each country, then averaged at the country level to compute the means for the full sample and the non-US subsample.

Table 1.5: Correlation matrix

Variables	US target	Shareholder protection	Anti-self-dealing	Anti-director right	Takeover law	Anti-takeover	Ln GDP	Ln GNP	GDP growth	Market return	Market cap	Turnover	Value traded	Competition
US target	1.000													
Shareholder protection	-0.818	1.000												
Anti-self-dealing	0.053	0.024	1.000											
Anti-director right	-0.683	0.649	0.457	1.000										
Takeover law	-0.080	0.418	0.592	0.337	1.000									
Anti-takeover	0.007	0.171	0.517	0.174	0.815	1.000								
Ln GDP	0.823	-0.529	0.058	-0.497	0.086	0.038	1.000							
Ln GNP	0.411	0.099	0.006	-0.427	0.467	0.272	0.508	1.000						
GDP growth	-0.069	-0.171	0.102	0.070	-0.138	-0.030	-0.195	-0.425	1.000					
Market return	-0.055	0.015	0.028	0.058	0.028	0.055	-0.080	-0.104	0.134	1.000				
Market cap	0.188	-0.192	0.423	0.041	0.314	0.293	0.102	0.183	0.240	0.258	1.000			
Turnover	0.606	-0.409	0.028	-0.372	-0.042	-0.040	0.644	0.332	-0.371	-0.229	0.001	1.000		
Value traded	0.635	-0.482	0.192	-0.359	0.076	0.070	0.592	0.387	-0.182	-0.194	0.469	0.829	1.000	
Competition	-0.011	0.072	0.042	-0.098	0.163	0.234	-0.101	0.157	0.076	-0.222	-0.093	-0.012	0.025	1.000

This table presents pairwise correlations. All variables are defined in table 1.1.

Table 1.6: The US premium in global control contests

	Dependent Variable			
	Premium		Mark-up	42-day premium
Independent Variables	(1)	(2)	(3)	(4)
US target	0.073***		0.071***	0.075***
	(0.006)		(0.006)	(0.007)
Ln target size	−0.032***	−0.030***	−0.032***	
	(0.002)	(0.002)	(0.002)	
Ln 42-day market cap				−0.033***
				(0.002)
BM high	0.034***	0.027***	0.034***	0.035***
	(0.005)	(0.006)	(0.005)	(0.007)
Run-up	0.599***	0.590***	−0.350***	
	(0.018)	(0.017)	(0.013)	
42-day run-up				0.801***
				(0.010)
52W-high	−1.283	−1.358	−1.495	−1.554
	(1.269)	(1.369)	(1.280)	(1.375)
Public acquirer	0.021***	0.026***	0.020***	0.017***
	(0.004)	(0.004)	(0.004)	(0.005)
Toehold	−0.035***	−0.053***	−0.034***	−0.031***
	(0.007)	(0.007)	(0.007)	(0.006)
Horizontal	0.015***	0.021***	0.016***	0.016***
	(0.004)	(0.006)	(0.004)	(0.003)
Club-deal	−0.029**	−0.028**	−0.027**	−0.029**
	(0.012)	(0.011)	(0.012)	(0.012)
Cross-border	0.026***	0.007	0.024***	0.024***
	(0.006)	(0.005)	(0.006)	(0.006)
All cash	0.017*	0.026***	0.016*	0.012
	(0.009)	(0.009)	(0.008)	(0.008)
Friendly	−0.087***	−0.087***	−0.091***	−0.091***
	(0.022)	(0.022)	(0.022)	(0.023)
Solicited bid	−0.032***	−0.021**	−0.029***	−0.031***
	(0.010)	(0.009)	(0.010)	(0.010)
Tender offer	0.014*	−0.003	0.015*	0.012
	(0.008)	(0.009)	(0.008)	(0.008)
Constant	0.469***	0.482***	0.451***	0.461***
	(0.044)	(0.039)	(0.036)	(0.043)
Observations	7,177	7,177	7,162	7,714
Adjusted R-squared	0.324	0.308	0.233	0.588
Number of countries	66	66	66	66

The dependent variable is the takeover premium in specifications (1) – (2), mark-up in specification (3) and 42-day premium in specification (4). Variables are defined in table 1.1. All regressions include industry, year dummies, and are estimated using OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 1.7: Shareholder protection, market development, and the non-US premium discount

	Dependent Variable: Premium			
Independent Variables	(1)	(2)	(3)	(4)
US target		0.088***	0.067***	
		(0.016)	(0.022)	
Shareholder protection	−0.024***	0.007	0.004	0.002
	(0.006)	(0.009)	(0.007)	(0.007)
Ln GDP			0.008	0.012**
			(0.006)	(0.006)
Market return			−0.004	−0.013
			(0.021)	(0.019)
Market cap			−0.009	−0.013
			(0.013)	(0.013)
Turnover			−0.005	−0.023
			(0.007)	(0.018)
Competition			−0.268*	−0.260*
			(0.146)	(0.151)
Constant	0.575***	0.442***	0.254	0.119
	(0.046)	(0.062)	(0.180)	(0.169)
Observations	6,866	6,866	6,807	3,567
Adjusted R-squared	0.322	0.330	0.332	0.297
Controls	Yes	Yes	Yes	Yes
Number of countries	46	46	42	41

The dependent variable is takeover premium, computed as the natural logarithm of the ratio between the final price and the target's closing price one month before the transaction announcement. Unreported control variables include target size, BM high, run-up, 52-week high, public acquirer, toehold, horizontal, club-deal, cross-border, all cash, friendly, solicited bid, tender offer, industry and year fixed effects. Variables are defined in table 1.1. Estimations are based on the full sample in columns (1)–(3), and on non-US targets in column (4). All regressions are estimated using OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 1.8: Legal investor protection

	Dependent Variable: Premium				
Independent Variables	(1)	(2)	(3)	(4)	(5)
US target	0.067***	0.044**	0.046*	0.061**	0.052*
	(0.022)	(0.019)	(0.026)	(0.027)	(0.028)
Shareholder protection	0.004				
	(0.007)				
Anti-self-dealing		−0.053			
		(0.036)			
Anti-director right			0.000		
			(0.012)		
Takeover law				0.051	
				(0.045)	
Anti-takeover					0.022
					(0.034)
Ln GDP	0.008	0.013**	0.013*	0.008	0.010
	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)
Market return	−0.004	−0.010	−0.007	−0.013	−0.014
	(0.021)	(0.021)	(0.022)	(0.025)	(0.025)
Market cap	−0.009	0.013	−0.000	−0.012	−0.007
	(0.013)	(0.012)	(0.013)	(0.016)	(0.014)
Turnover	−0.005	−0.002	−0.003	−0.002	−0.003
	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)
Competition	−0.268*	0.150	0.094	0.080	0.093
	(0.146)	(0.231)	(0.252)	(0.289)	(0.298)
Constant	0.254	0.082	0.062	0.177	0.120
	(0.180)	(0.180)	(0.211)	(0.242)	(0.247)
Observations	6,807	6,910	6,910	6,742	6,742
Adjusted R-squared	0.332	0.328	0.327	0.328	0.328
Controls	Yes	Yes	Yes	Yes	Yes
Number of countries	42	49	49	43	43

The dependent variable is takeover premium, computed as the natural logarithm of the ratio between the final price and the target's closing price one month before the transaction announcement. Unreported control variables include target size, BM high, run-up, 52-week high, public acquirer, toehold, horizontal, club-deal, cross-border, all cash, friendly, solicited bid, tender offer, industry, and year fixed effects. Variables are defined in table 1.1. All regressions are estimated using OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 1.9: Economic and market development

	Dependent Variable: Premium				
Independent Variables	(1)	(2)	(3)	(4)	(5)
US target	0.052***	0.066***	0.069***	0.043**	0.048***
	(0.009)	(0.010)	(0.009)	(0.020)	(0.016)
Ln GNP	0.008				
	(0.007)				
Ln GDP				0.011*	0.010*
				(0.006)	(0.006)
GDP growth					−0.001
					(0.002)
Market return	−0.013				
	(0.026)				
Market cap	0.008	−0.000	0.009		
	(0.011)	(0.014)	(0.014)		
Value traded		0.007		0.003	
		(0.007)		(0.006)	
Turnover	0.001		0.006		
	(0.005)		(0.007)		
Competition	0.138		0.092	0.123	
	(0.244)		(0.237)	(0.217)	
Anti-self-dealing	−0.048	−0.046	−0.049	−0.043	−0.038
	(0.037)	(0.032)	(0.032)	(0.030)	(0.032)
Constant	0.532***	0.505***	0.440***	0.103	0.215
	(0.087)	(0.046)	(0.048)	(0.178)	(0.175)
Observations	6,145	6,941	6,922	6,922	6,942
Adjusted R-squared	0.360	0.326	0.327	0.328	0.327
Controls	Yes	Yes	Yes	Yes	Yes
Number of countries	49	57	53	53	57

The dependent variable is takeover premium, computed as the natural logarithm of the ratio between the final price and the target's closing price one month before the transaction announcement. Unreported control variables include target size, BM high, run-up, 52-week high, public acquirer, toehold, horizontal, club-deal, cross-border, all cash, friendly, solicited bid, tender offer, industry and year fixed effects. Variables are defined in table 1.1. All regressions are estimated using OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 1.10: Foreign acquirers

	Dependent Variables: Premium		
Independent Variables	(1)	(2)	(3)
US target	0.045**	0.045**	0.052**
	(0.018)	(0.018)	(0.021)
Cross-border	0.028***	0.028***	
	(0.005)	(0.006)	
US target x Cross-border		−0.001	
		(0.005)	
Ln GDP	0.012**	0.012**	0.012*
	(0.006)	(0.006)	(0.007)
Market cap	0.008	0.008	0.011
	(0.012)	(0.012)	(0.017)
Turnover	−0.001	−0.001	−0.003
	(0.007)	(0.007)	(0.006)
Anti-self-dealing	−0.047	−0.047	−0.068
	(0.034)	(0.034)	(0.045)
Constant	0.119	0.118	0.191
	(0.166)	(0.165)	(0.198)
Observations	6,940	6,940	5,101
Adjusted R-squared	0.327	0.327	0.318
Controls	Yes	Yes	Yes
Number of countries	57	57	49

The dependent variable is takeover premium, computed as the natural logarithm of the ratio between the final price and the target's closing price one month before the transaction announcement. *US target x Cross-border* equals one when non-US acquirers takeover US targets, and zero otherwise. Unreported control variables include target size, BM high, run-up, 52-week high, public acquirer, toehold, horizontal, club-deal, all cash, friendly, solicited bid, tender offer, industry and year fixed effects. Variables are defined in table 1.1. Estimations are based on the full sample in columns (1) – (2), and only domestic transactions in column (3). All regressions are estimated using OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote the significance at 1%, 5%, and 10%, respectively.

Table 1.11: Non-US premium discount across size quantiles

Independent Variables	Dependent Variable: Premium
US target	0.065**
	(0.026)
Size group 2	−0.040***
	(0.013)
Size group 3	−0.034***
	(0.013)
Size group 4	−0.023
	(0.017)
US target x Size group 2	−0.010
	(0.015)
US target x Size group 3	−0.041**
	(0.016)
US target x Size group 4	−0.026
	(0.016)
Ln GDP	0.012**
	(0.006)
Market cap	0.006
	(0.012)
Turnover	−0.002
	(0.007)
Anti-self-dealing	−0.043
	(0.034)
Constant	0.119
	(0.166)
Observations	6,940
Adjusted R-squared	0.332
Controls	Yes
Number of Countries	57
F-test for non-US premium discount	
Size group 2	8.52***
Size group 3	1.80
Size group 4	5.04**

The dependent variable is takeover premium, computed as the natural logarithm of the ratio between the final price and the target's closing price one month before the transaction announcement. The four size groups include (1) below the 25th percentile, (2) between the 25th and 50th, (3) between the 50th and 75th, and (4) above the 75th percentile. Unreported control variables include target size, BM high, run-up, 52-week high, public acquirer, toehold, horizontal, club-deal, cross-border, all cash, friendly, solicited bid, tender offer, industry and year fixed effects. Variables are defined in table 1.1. All regressions are estimated using OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

PAPER 2

DISTRIBUTION OF TAKEOVER GAINS: A COMPARISON BETWEEN THE US AND OTHER MAJOR MARKETS

Van Diem Nguyen[*]

Abstract
The takeover literature lacks comparative studies of the US versus non-US markets, though certain facts present the US as an outlier. Non-US evidence is usually on individual markets, and at most on a group of European countries. This paper provides a unified analysis of takeover gain and gain division in seven major markets Australia, Canada, France, Germany, Japan, the UK, and the US. I compare the US to non-US markets, controlling for common gain determinants at both the deal and the country levels. I examine both the combined gain generated by the takeover and how this gain is split between the acquired and the acquiring firms. Consistent with the literature, I find that US takeovers, on average, create value. However, value creation is not significantly larger in the US than in other markets. The difference between US and non-US takeovers lies in the distribution of takeover gains. US targets earn systematically more than non-US targets in both absolute and relative terms. The finding is robust to individual country effects, common law legal origin, and differences in firm size between US and non-US targets.

Keywords: Takeover gains, division of takeover gains, corporate control, mergers and acquisitions, corporate governance

JEL classification: G34, G38

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2.1 Introduction

Our understanding of takeover gains is mainly derived from US experience. However, the US market is an atypical market for corporate control, and there is a lack of systematic comparison between the US and other countries in a single analysis. This paper fills this gap by examining a large sample of mergers and acquisitions in seven well-established takeover markets including the US, and documents systematic differences in the distribution of gains between US and non-US takeovers.

The US market is distinct from other markets for corporate control in several aspects. First, the US market is by far the largest and most active. From 2000 to 2013, takeovers targeting US listed firms accounted for almost half of all control transfers in public firms around the globe (according to the mergers and acquisitions database of S&P Capital IQ). Takeover volume in the US over the period was almost three times as large as the non-US average. Second, despite the recent trend of corporate governance convergence across countries, regulations concerning takeovers (such as the mandatory bid rule and defensive measures) differ substantially between the US and the typical international setting.[1] These facts suggest that the US market and its takeover outcomes might differ from what is observed in other countries.

I compare takeover premiums between the US and the rest of the world and find that transfers of control require significantly higher prices in the US than in other markets. The premium gap is around 7 percentage points (equivalent to 27 percent of the median premium in non-US markets), after controlling for important observable deal features, target and bidder characteristics, country differences in legal investor protection, and the competitiveness of the takeover market.

[1] See, e.g., Nenova (2006), and for a comparison of US versus UK and European takeover laws.

To explain the US premium puzzle, I investigate the synergy hypothesis versus the bargaining power hypothesis. On the one hand, higher premiums, or higher gains to the target firm, can stem from larger synergies generated by the change in control. The US stands out as a large economy, with much flexibility in restructuring the firm and more lenient labor regulations. In addition, its highly developed financial markets facilitate firm access to funding and may thus enable financially constrained bidders to compete for value-enhancing takeovers. These features suggest that US takeovers, on average, might produce larger synergistic gains than comparable deals abroad, and thus, the target should earn a higher premium, assuming it obtains a fixed fraction of the gains.

On the other hand, US targets might also earn a better position in the bargaining process and therefore extract a larger part of takeover gains. This would also explain the premium gap observed between US and non-US takeovers. But what empowers US targets? A more active market, while probably reflecting higher demand for takeovers, could also indicate tougher competition in obtaining control, both of which strengthen the target position and consequently raise the transfer price. Furthermore, US-style antitakeover provisions (e.g., poison pills and staggered boards) can be argued to be more effective than defensive measures commonly found elsewhere in preventing coercive bids, empowering the target in the negotiation, and promoting competition among multiple bidders.[2]

In the empirical analysis, synergistic gains are proxied for by the total change in shareholder wealth of both the target and the acquirer, i.e., the combined gains generated by the takeover. I measure gains with abnormal returns and dollar returns. The bargaining power of the target relative to the acquirer is estimated by the target's share of the combined gains (for value-increasing takeovers) and by the relative difference in dollar returns between the target and the acquiring firm.

[2]See Nenova (2003) for a review of international antitakeover devices.

The study is based on domestic mergers and acquisitions, announced 2000-2013, between public firms located in seven large takeover markets, namely Australia, Canada, France, Germany, Japan, the UK, and the US.

The results show that US takeovers, on average, generate synergies. This is consistent with Jensen and Ruback (1983), Bradley, Desai, and Kim (1988), Andrade, Mitchell, and Stafford (2001), and Bhagat, Dong, Hirshleifer, and Noah (2005). However, synergistic gains are not significantly larger in the US than in other markets, and hence do not explain the observed higher gains to US target firms. The acquired firms gain more in the US than in other countries, in terms of both absolute measures (cumulative abnormal returns, dollar returns) and relative measures (target gains in comparison with acquirer gains). The findings therefore lend support to the bargaining power hypothesis but not to the synergy hypothesis.

This paper makes two contributions to the literature. First, the paper is related to studies of takeover effects on shareholder wealth across countries. Conventionally, US takeovers trigger a statistically significant but relatively small increase in total shareholder wealth upon announcement, with the three-day combined cumulative abnormal returns ranging from 1 to 4 percent (Mulherin and Boone, 2000; Andrade et al., 2001; Graham, Lemmon, and Wolf, 2002; Betton, Eckbo, and Thorburn, 2008). International evidence, though more limited, appears similar: 1 percent in Europe (Campa and Hernando, 2004), 3.6 percent in Sweden (Holmén and Knopf, 2004), and 2.15 percent in markets excluding the US, the UK, and Canada (Alexandridis, Petmezas, and Travlos, 2010). Regarding the division of takeover gains between the target and the acquiring firms, US and UK studies generally report large announcement returns (in the range of 15-30 percent) for targets, but close to zero announcement returns for bidders (Bhagat et al., 2005; Moeller, Schlingemann, and Stulz, 2005; Betton et al., 2008; Martynova and Renneboog, 2011). This pattern does not hold universally, however. Lower target and higher acquirer gains are found in continental Europe (Martynova and Renneboog, 2011), Australia (Humphery-Jenner and

Powell, 2011), and generally less competitive markets (Alexandridis et al., 2010). Such disparity in the distribution of takeover gains may be due to country differences in shareholder protection (Rossi and Volpin, 2004), merger intensity (Alexandridis et al., 2010), and anti-takeover provisions (Humphery-Jenner and Powell, 2011). While aggregating evidence from individual studies suggests that target and acquirer gains may differ between the US and other takeover markets, there is a lack of systematic comparisons where gain determinants such as deal, target, and bidder characteristics are taken into account. This paper provides a unified analysis of takeover gains and gain division across countries, and documents systematic differences in the distribution of gains between US and non-US acquisitions, after controlling for contributing factors at the deal and country levels.[3]

Second, this paper identifies the source of the large premium gap observed between US and non-US takeovers. Larger premiums, or higher gains for US targets, result from the distribution of wealth between the acquirer and the target, but not from greater value creation. When studying the impact of legal investor protection on premiums, Rossi and Volpin (2004) note that their documented positive relationship is driven by firms located in the UK and the US. In contrast, I show that it is the US market that really stands out in global markets for control, and that differences in general legal shareholder protection do not fully explain the premium disparity between US and non-US (including UK) takeovers. Neither does controlling for shareholder protection mitigate the US vs. non-US difference in the target bargaining power.

The rest of the paper proceeds as follows. Section 2.2 describes the sample and various measures of takeover gains. Section 2.3 discusses the related hypotheses. Section 2.4 examines the differences in takeover gains between the US and other major markets for control. Section 2.5 concludes the paper and discusses potential extension.

[3]The seven countries included in the study account for the majority of takeovers around the world.

2.2 Data and measures of takeover gains

Data can be classified into two broad categories. The first set covers information on transfer of corporate control, at the individual deal level, obtained from the mergers and acquisitions database of S&P Capital IQ (CIQ). The second set of data focuses on characteristics of target countries, including measures of control intensity and legal investor protection. Table 2.1 describes the variables and their sources.

2.2.1 The sample

I start with all mergers and acquisitions announced from January 1, 2000 to December 31, 2013 and completed as of June 30, 2014.[4] I then exclude cross-border takeovers (about 22 percent of the initial dataset). The sample of domestic acquisitions helps to remove any difference in country-level governance between the target and the acquirer, and to cleanly identify the individual country effects on control contests, and particularly the relative difference between the US and other takeover markets. Nguyen (2015) finds that the premium differential between US and non-US targets is not driven by the participation of foreign acquirers. Thus, I do not leave out important information by focusing on domestic transactions.

In order to compute abnormal returns, a measure of takeover gains, I require both the acquirer and the target to be public. Since I am interested in transactions motivated by changes in control, I keep only mergers and acquisitions where the acquirer owns less than 50% of the target stock before the deal and more than 50% after the deal. The sample consists of 4,787 takeovers, covering target firms located in 72 countries.

[4]It is common in the related literature to focus on successful deals (e.g., Rossi and Volpin (2004); Martynova and Renneboog (2011)).

Next, I classify the firm locations into three regions: Asia/ Pacific, Europe, and North America. Apart from Europe, I select, for each region, two markets with the highest number of takeovers. These are Australia, Japan, Canada, and the US. Regarding Europe, in addition to the UK, the largest market, I include the two next largest markets, France and Germany, as two representatives for continental Europe, since studies on European takeovers tend to treat the UK and continental Europe separately (Martynova and Renneboog, 2011). These seven markets account for 83 percent of the sample.

I further remove target firms that are not listed on the stock exchanges of their domiciled countries in order to avoid any potential impact of cross-listing.[5] For frequent acquirers, I keep only the first transactions among the deals announced within 300 trading days. This mitigates potential effects of overlapping events and attenuates the effect of market anticipation on bidder returns (Cai, Song, and Walkling, 2011). Finally, firms must have at least 100 days of common stock returns available over the estimation period from 297 to 43 trading days before the bid announcement, as well as three days of stock returns surrounding the deal announcement (1 day before to 1 day after the announcement). The final sample consists of 3,080 transactions.

2.2.2 Measures of takeover gains and their division

I use both cumulative abnormal return (CAR) and dollar return to measure the gains to the target, the bidder, and the combined gains generated by the takeover (following Malatesta (1983), Bradley et al. (1988), Moeller, Schlingemann, and Stulz (2004), and Ahern (2012)). The advantage of dollar returns over abnormal returns lies in the former's ability to take firm size into account, making them better suited for assessing the economic significance

[5] See Doidge (2004), Doidge, Karolyi, and Stulz (2009) for the benefits of US cross-listings. Among the removed firms, half are foreign firms cross-listed in the US, while almost a quarter are US firms cross-listed abroad.

of the gains.

I define *announcement gains* as the gains over the three trading days surrounding the bid, and *total gains* from the event as the gains accrued from 42 trading days before the bid till the day after. Both windows are frequently used in the literature. The shorter one contains less noise in gain estimation, while the longer window allows for rumors and potential leakage of information prior to the bid. It is common in the takeover literature to start the run-up period two calendar months prior to the announcement date (Schwert, 1996).

2.2.2.1 Cumulative abnormal returns

CARs can be computed in two ways: (i) as the difference between the actual returns and the normal returns over the event window (MacKinlay, 1997), and (ii) by the conditional event parameter regression (Eckbo, Maksimovic, and Williams, 1990). While both approaches produce identical abnormal return estimates, the latter easily incorporates variable-length event windows across takeovers, and produces estimates of standard errors of the abnormal returns directly (Betton et al., 2008).

Following Betton et al. (2008), I use the regression approach to estimate CARs. The average daily abnormal stock return for j over event window k is AR_{jk}, the coefficient associated with the dummy variable indicating the event window, D_k, in the market model,[6]

$$r_{jt} = \alpha_j + \beta_j r_{mt} + AR_{j,runup} D_{runup,t} + AR_{j,ann} D_{ann,t} + \varepsilon_{jt} \quad (2.1)$$

$$r_{jt} = \alpha_j + \beta_j r_{mt} + AR_{j,total} D_{total,t} + \varepsilon_{jt}, \quad (2.2)$$

[6]For short windows, estimates of daily abnormal returns are not much sensitive to the underlying asset pricing model (Andrade et al., 2001; Kothari and Warner, 2007).

t in trading day $\{-297,...,1\}$, with day 0 being the bid announcement day. j can be the target firm, the acquiring firm, or a value-weighted portfolio of the target and the acquirer. r_{jt} is the return to firm (portfolio) j over day t, r_{mt} is the market return computed based on the Morgan Stanley Capital International (MSCI) country indexes. The three event windows include the run-up period $[-42,-2]$ ($k = runup$), the announcement period $[-1,1]$ ($k = ann$), and the total period $[-42,1]$ ($k = total$). D_{kt} takes a value of one if day t is in the k^{th} event window and zero otherwise. Specifications (2.1) and (2.2) are estimated with OLS using robust standard errors.

CAR to firm (portfolio) j over event period k is

$$CAR_{jk} = \omega_k AR_{jk} \tag{2.3}$$

where ω_k is the number of trading days in the event window k. When j is a value-weighted portfolio of the target and the acquirer, CAR_{jk} presents the combined abnormal returns (Bradley et al., 1988).

2.2.2.2 Dollar returns

I compute the dollar returns for a firm j over an event window k by multiplying their CARs with their market capitalization (in million dollars) as of the starting day of the event window:[7]

$$AR_{jk} = CAR_{jk} * m_{jk} \tag{2.4}$$

That is, m_{jk} is the firm's market capitalization the day prior to the deal announcement if k is the announcement period $[-1,1]$, and 42 trading days before the bid if k is the total period $[-42,1]$. The combined dollar returns are the sum of the dollar returns to the

[7]Foreign currency is converted at historical rates.

target and the acquirer (Bhagat et al., 2005).[8] I also scale the dollar returns by the total transaction value to obtain a profitability-like measure called *dollar return per deal value*. This represents the dollar gains per dollar spent on takeovers (Moeller et al., 2004).

2.2.2.3 Division of the gains

Ideally, the fraction of the combined dollar gains received by one party (i.e., either the acquirer or the target) would reflect how takeover gains are split between the firms involved. Unfortunately, such calculations are problematic if the dollar returns are negative for either or both firms. Following Ahern (2012), I measure the gain division as the difference between the target's and the acquirer's abnormal dollar returns, as a percentage of the total market capitalization of the acquirer and target 42 trading days prior to the announcement date, denoted *difference in dollar gains (%)*. This measure represents the relative gain of the target versus the acquirer for each dollar of their combined market value, and overcomes the issue of negative dollar returns. For transactions where both firms obtain positive dollar gains, I also compute the percentage of combined gains captured by the target, *target % of gains*.

2.3 Hypothesis development

In a seminal cross-country study of takeover activities, Rossi and Volpin (2004) document a positive relation between premium and shareholder protection and find that this relation is driven by target firms located in the UK and the US. In table 2.2, I analyze a large sample of more than 7,000 successful takeovers announced 2000-2013 in 66 countries. I estimate the following specification,

$$\text{Premium} = \alpha + \beta \text{US target} + C'\gamma + \varepsilon, \tag{2.5}$$

[8]The combined dollar return can also be computed as the combined value of the acquiring and acquired firms multiplied by the combined CAR (Bradley et al., 1988; Moeller et al., 2004). This measure is 0.88 correlated with the measure used in the paper, and do not materially alter the results discussed below.

where *Premium* is the natural logarithm of the ratio between the offer price and the target's closing price one month before the transaction announcement; *US target* takes value of one if the target is located in the United States, and zero otherwise; C is a set of control variables at deal and country levels. At the country level, legal investor protection is proxied by the *anti-self-dealing* index (Djankov, La Porta, Lopez-de Silanes, and Shleifer, 2008). *Competition* in the takeover market is measured by the ratio of the total value of corporate control transactions in the year before the deal to the target country's market capitalization. Deal-level controls describe the target, the acquirer, and deal features. Target characteristics include size (the natural logarithm of the target market capitalization one month prior to the bid announcement), an indicator variable for value stocks, run-up (the change in target stock price in the one month period before the announcement), and the change in the target's pre-deal stock price compared with its year high and year low prices. Bidder-related controlling factors indicate whether the acquiring firm is listed, owns shares in the target when announcing the bid, is from the same industry as the target, and forms a consortium to buy the target. Deal characteristics contain a group of indicator variables for cross-border, entirely-cash-paid, friendly and solicited transactions, as well as tender offer. Finally, I also control for target industry types and year dummies. In all regressions, standard errors are clustered at the target country level as observations within a country are likely to be correlated. I do not report coefficients associated with industry and year dummies.

The estimation results in table 2.2 suggest the following: first, US targets systematically receive a higher premium than foreign targets in control contests around the globe. Second, the premium difference between US and non-US takeovers is robust to country differences in legal investor protection and to the takeover market competition. Nguyen (2015) extends the analysis of the US premium gap and shows that this gap is not driven by foreign acquirers and that it is robust to country differences in economic and financial market

development.

The present paper examines whether the US premium puzzle results from value creation or value distribution in the takeover process. Since the premium is a measure of target gains, it follows that it satisfies equation (2.6):

$$\text{Target gains} = \alpha V, \tag{2.6}$$

where V represents the synergistic gains generated by the change in control, and α (non-negative) is the target's share in the takeover gains. α can be viewed as an indicator of the target bargaining power relative to the acquirer.

Given that US targets earn significantly more than non-US targets, V and/or α must be larger in the US case. A higher V means that US takeovers produce larger synergistic gains, this is called the synergy hypothesis. Operating synergies can arise from: (i) economies of scale, (ii) the enhancement of market power for the merging firm, (iii) asset complementarities (Hoberg and Phillips, 2010), or (iv) an improvement in managerial efficiency (Li, 2013). Meanwhile, financial synergies stem from the reduction of default risk by combining imperfectly correlated cash flows, which in turn allows for larger debt capacity and tax savings (Lewellen, 1971; Leland, 2007).

As shown in table 2.3, the US obviously leads in terms of economic strength and financial market development. The US is also known to have more lenient labor regulations and larger flexibility in restructuring acquired firms, compared with, e.g., continental European countries. All these factors may provide greater scope for synergies. Furthermore, a highly developed financial market can facilitate firm access to funding and thus enable financially constrained firms to compete for value-enhancing takeovers.

If takeovers produced similar synergies around the world (i.e., V is constant across countries), target gains would be higher in a market granting the target more bargaining power; that is, in a market with a higher α in equation (2.6). The bargaining power hypothesis thus concerns the division of takeover gains between the acquired and the acquiring firms. Do US targets extract a larger proportion of the takeover gains than non-US targets? This hypothesis differs from the synergy hypothesis in the sense that US targets can still gain more than foreign firms even when there is no systematic difference in the combined gains.

As shown in figure 2.1, the US has the highest percentage of listed firms acquired during the period 2000-2013. A more active market probably reflects a higher demand for takeovers, but possibly also tougher competition in obtaining control, both of which positively affect the transfer price and empower the target in the bargaining process.

Furthermore, compared with the typical international setting, the US system grants the target's board of directors a wide range of defensive actions against an unsolicited bid. Anti-takeover devices such as "poison pills" and "staggered boards" are uncommon almost everywhere outside the US (Nenova, 2006). The relationship between firm-specific takeover defenses and target gains receives mixed support from the literature. Comment and Schwert (1995) and Heron and Lie (2006) show that targets adopting poison pills receive higher premiums. However, other studies find that premiums are unaffected by staggered boards (Bates, Becher, and Lemmon, 2008), the presence of poison pills, and target hostility to the initial bid (Betton et al., 2008).

In the empirical analysis, I measure the synergistic gains V in (2.6) by the combined gains of the target and the acquirer (Bradley et al., 1988), whereas α is proxied for by measures of gain division, i.e., difference in dollar gains and the target's percentage of gains. The synergy hypothesis predicts larger combined gains for US takeovers and the

bargaining power hypothesis predicts higher target gains (relative to acquirer gains) in the US. The two hypotheses are not mutually exclusive.

2.4 Empirical analysis

2.4.1 Takeover gains in major markets for corporate control

For each transaction, I estimate target, acquirer, and combined *CARs* during the announcement as well as for the total period, according to equations (2.1)–(2.3). These estimated *CARs* are then averaged for each region (country):

$$ACAR_k = \frac{1}{N}\sum_j CAR_{jk}, \tag{2.7}$$

where N is the number of takeovers for each region (country). The z-values for $ACAR_k$ are computed as:

$$z = \frac{1}{\sqrt{N}}\sum_j \frac{AR_{jk}}{\sigma_{AR_{jk}}}, \tag{2.8}$$

with $\sigma_{AR_{jk}}$ being the estimated standard error of AR_{jk} in equations (2.1) and (2.2). Table 2.4 reports these average *CARs* (in percent) and their associated z-statistics.

Target firms obtain significantly positive and large *CARs*. The announcement window captures a major share of the total returns, consistent with the notion that it is difficult to identify takeover targets, and hence the announcement usually comes as a surprise to the market. US target shareholders gain the most with 23.8 percent abnormal returns during the announcement period and 31.2 percent for the entire event window. France has the lowest target abnormal return of the seven markets. For acquiring firms, total returns are insignificant; announcement returns are mostly positive and significant, though quite modest (below 1.5 percent). Canada and the UK are two exceptions with slightly negative returns: -0.04 percent and -0.18 percent, respectively. Australian acquirers earn the highest announce-

ment returns. Combined returns for both event windows are mostly positive and significant.

Table 2.5 shows the descriptive statistics for the dollar returns upon announcement, by country. The difference in sign between the country average dollar returns and the country average *CARs* implies that *CARs* differ in sign for small and large bidders. Acquirers in the US lose on average 91 million dollars during the announcement period. The dollar loss for the median US bidder is, however, much less severe. The disparity between the means and the medians suggests presence of extreme values in the sample.[9]

Figure 2.2 illustrates the distribution of the acquirer and combined dollar returns upon announcement over time, for US and non-US takeovers separately. The US market generally exhibits larger variance in dollar returns. I also sum up the announcement dollar returns to the acquirer over the year, for each country, and plot these aggregate dollar returns (measured in billions of dollars) for US and non-US markets in figure 2.3. For most of the sample years, the bidder's aggregate dollar returns in the US differ remarkably from other markets, indicating the dominance of some very big US acquirers. US acquirers suffer the largest aggregate losses in 2000 with many value-destructive acquisitions made, while the huge losses in 2003 and 2009 are driven by a few outliers (cf. figure 2.2a).

In order to facilitate the comparison of absolute gains across markets where there is variation in firm sizes and transaction values, I scale announcement dollar returns by transaction values. I regress these estimated dollar returns per deal values on region and country dummies, using heteroskedastic robust standard errors. The coefficients associated with these region (country) dummies represent the average announcement dollar returns per dollar spent for the region (country), and are reported in table 2.6. Target gains are statistically significant, while bidder gains are not. For US takeovers, upon announcement the bidder loses on average 12 cents per dollar spent on acquisitions, similar to the average

[9] Gain measures used in later estimation are thus Winsorized at the 1st and 99th percentiles.

loss during the period 1998-2001 documented by Moeller et al. (2005). Australia is the only market with a positive and significant average combined dollar return per deal value.

Table 2.7 summarizes the division of announcement gains across markets. The relative gains of the target versus the bidder seem larger in Australia, Canada, the UK, and the US than in the other three countries. The US median difference in dollar gains is similar to the statistics documented by Ahern (2012). Thus, even in markets with big gaps in CAR between the target and the acquirer, the relative difference in dollar returns is much more modest. For every dollar of the combined market value, the target typically (on average) earns 2 (7) percent more than the bidder. Figure 2.5a shows a histogram of the target's relative gains in the announcement period (between the 1st and 99th percentiles). When both the acquirer and the target have positive dollar gains, the target on average receives 43 percent of the combined gains. The distribution of the target share of the announcement gains is presented in figure 2.5b. It is more common that the acquirer actually gets a larger share than the target when both firms earn positive returns.

2.4.2 What differs between the US and other major markets?

Using the sample of individual deals, I estimate the following specification:

$$\text{Takeover gains} = \alpha + \beta \text{US} + C'\gamma + \varepsilon, \tag{2.9}$$

where the dependent variables are different measures of takeover gains and the gain division, all Winsorized at the 1st and 99th percentiles (except for the target's share of the combined gains). The dummy variable *US* takes a value of one if the takeover is in the United States, and zero otherwise. C is a set of control variables describing the target, the acquirer, and the deal features commonly found to affect takeover gains (see, e.g., Rossi

and Volpin (2004); Moeller et al. (2004); Betton, Eckbo, Thompson, and Thorburn (2014)).

In particular, target characteristics include the natural logarithm of the relative size (the target-acquirer market capitalization ratio), an indicator variable for value stocks (BM-high), run-up (the change in target stock price over 42 trading days before the announcement), and the change in the target pre-deal stock price compared with its year high price (52W-high). Bidder-related controlling factors indicate whether the acquiring firm owns shares in the target when announcing the bid (toehold) and whether it is from the same industry as the target (horizontal). Deal characteristics contain a group of indicator variables for entirely-cash-paid, friendly, solicited transactions, and tender offer. In regressions with bidder gains as the dependent variables, I also control for the target's total abnormal returns (Betton et al., 2014).

Following recent cross-country studies of takeovers, I control for legal investor protection (Rossi and Volpin, 2004) and the competitiveness of the market for control (Alexandridis et al., 2010). To measure the quality of shareholder protection, I use the anti-self-dealing index (Djankov et al., 2008), matched with the country of incorporation of the target firm. The index specifically addresses how the law deals with the strength of minority shareholder protection against tunneling by the controlling shareholder, the main problem underlying post-takeover dilution. A higher value implies a more investor-friendly legal environment.

Intensity of control contests at the country level is proxied by *deal value % market cap*, i.e., the total value of successful deals during a year as a percentage of the target country's market capitalization. All regressions include industry and year fixed effects (coefficients unreported). The specifications are estimated using OLS with heteroskedastic standard errors. The results are reported in tables 2.8 – 2.12, for different dependent variables.

2.4.2.1 Takeover gains

Table 2.8 shows that upon announcement, US targets earn abnormal returns 10 percentage points higher than foreign targets, while returns for US bidders are 1.5 percentage points lower. Combined returns are, however, not significantly higher in the US. According to table 2.9, the total returns, measured as $CAR(-42,1)$, also exhibit a similar pattern: higher returns for US targets and lower returns for US acquirers, but no significant difference in combined returns.

Betton et al. (2014) argue that target run-ups can proxy for discounted expected synergistic gains from a control change. In table 2.10, I estimate specification (2.9) using $CAR(-42,-2)$ as the dependent variable. As seen in the estimation results, target run-ups are not significantly higher in the US.

The analysis of dollar returns upon announcement (table 2.11) shows that US targets earn 4 cents more per dollar spent on the acquisition than non-US targets, whereas no significant difference is evident in terms of bidder or combined gains. The overall results for takeover gains do not support the synergy hypothesis.

The coefficient estimates for control variables are, in general, consistent with prior research. Target gains decrease in size (Rossi and Volpin, 2004; Fidrmuc, Roosenboom, Paap, and Teunissen, 2012) and in the relative drop in the target stock price from its year high (Baker, Pan, and Wurgler, 2012; Betton et al., 2014). Target returns are lower for solicited bids (Fich, Cai, and Tran, 2011; Fidrmuc et al., 2012), and higher for value stocks (Betton et al., 2008), all-cash paid transactions (Rossi and Volpin, 2004), and tender offer.[10] Both combined returns and acquirer returns are positively related to the target's total returns (Betton et al., 2014).

[10]The solicited classification in CIQ relates very closely to target initiation of the deal.

2.4.2.2 Division of gains

Table 2.12 reports estimation results concerning the division of takeover gains. Based on the full sample (columns (1)–(2)), the difference in dollar gains between the target and the acquirer is significantly larger in US takeovers. Relative dollar returns (as a percentage of combined market value) for US targets are 2 percentage points higher than those for non-US targets upon the bid announcement, and 1.5 percentage points higher during the longer event window. The US versus non-US difference is even stronger in a sub-sample of transactions with both firms earning positive dollar returns (columns (3)–(4)).

The overall results are consistent with the bargaining power hypothesis, and indicate that US targets have a better position in the bargaining process than comparable firms elsewhere.

2.4.3 Robustness check

2.4.3.1 The US vs. other country fixed effects

In table 2.13, I compare the US with each of the takeover markets in the sample in terms of takeover gains and gain division, during the announcement period, controlling for all deal-level factors described in the vector of control variables in (2.9). The differences relative to the US are captured by the coefficients associated with the countries. Among the seven included takeover markets, the US leads in target announcement returns. The UK, a market usually considered to also have large target gains, is 9.5 percentage points behind the US. Australia, Germany, and Japan yield higher acquirer returns than the US. While the combined gains are mostly similar, the distribution of gains exhibits a clear difference between the US and the other six markets: US targets obtain a larger proportion of the takeover gains. In unreported regressions, I checked country fixed effects for the non-US subsample and found that no other markets follow a pattern similar to the US (i.e., higher

target gains and higher target share in the gains).

2.4.3.2 The US and legal origins

In table 2.14, panel A, I test for the effect of English legal origin on announcement gains and gain division in non-US takeover markets. The common-law effect appears to resemble the pattern found for the US. In panel B, I focus only on takeover markets with English legal origin. US targets still gain more than firms in other countries with a common-law legal origin. The proportion of gains accrued to the target in value–enhancing takeovers is much higher in the US (column (8)). The legal origin does not seem to fully explain the US pattern.

2.4.3.3 Firm size

The size of the target firm is negatively related to target returns, and positively related to bidder returns (Betton et al., 2008). If US firms are often larger than non-US ones, the difference in target gains between US and non-US takeovers could be underestimated. To address the firm size concern, I divide the targets into four groups based on size (market capitalization 42 trading days before the announcement): (i) below the 25th percentile, (ii) between the 25th and 50th, (iii) between the 50th and 75th, and, (iv) above the 75th percentile. I then include in equation (2.9) the indicator variables for these size categories together with their interaction with the US dummy (unreported results). I find that target size affects the relative difference in abnormal returns between US and non-US markets, and this is driven by the group of smallest firms, i.e., the bottom quartile. Table 2.15 presents the estimation results of equation (2.9). *Small* is a dummy variable equaling one if the size of the target firm is below the 25th percentile, and zero otherwise; other control variables are unreported. Regarding abnormal returns in the announcement period, US bidders perform no worse than non-US ones in acquisitions of small firms. Measures such

as dollar return or difference in dollar gains already account for firm size, and hence the US vs. non-US differential in these measures does not vary across different size categories (insignificant interaction terms). Compared with other markets, takeovers in the US yield similar synergistic gains. The target firms, however, extract a larger fraction of the total gains, and thus obtain larger gains.

2.5 Conclusion

I examine a large sample of successful domestic takeovers announced 2000-2013 in the world's seven most developed markets for control. Consistent with previous literature, I find that takeovers generally trigger a small and positive market reaction to the combined firm, and targets are often the major winner. However, when accounting for firm size effects, the difference in dollar return between the acquired and the acquiring firms is modest.

I document systematic differences in the distribution of takeover gains between US and non-US takeovers, though the combined change in shareholder wealth is similar across markets. US targets earn more than non-US targets in both absolute and relative terms: (i) 10 percentage points higher in CAR, (ii) 4 cents more per dollar spent on the acquisition, and (iii) 2 percentage points higher in the relative dollar returns. The results suggest that target firms have stronger bargaining power in the US than elsewhere. This finding is robust to individual country effects, the Anglo-Saxon effect, and the concern of US firms being typically larger than foreign firms.

It is of genuine interest to determine factors that strengthen the target's bargaining position in the US. A factor not addressed in the above analysis is the variation in target ownership structure. For a widely-held target, no shareholder is pivotal to the success or failure of the takeover, which in turn requires the bidder to offer a sufficiently high

price to obtain control. Ownership dispersion in the takeover context is thus plagued with the free-rider problem (Grossman and Hart, 1980). Target gains would be expected to be positively related to ownership dispersion. Ideally, I should control for ownership structure of the target firm in the estimation of takeover gain and gain division. This information is unfortunately unavailable. However, Holderness (2009) documents that the ownership of US firms is typically similar to that in other countries. Among the sample countries, while US firms demonstrate a lower level of large-block ownership compared with French or German firms, their ownership appears much more concentrated than the ownership of firms in Japan and the UK (Holderness, 2009). Target gains are significantly lower in these two countries than that in the US, implying that ownership dispersion is not likely to underlie the country differences in target's bargaining power.

Strong target bargaining power can arise from US-specific anti-takeover provisions, e.g., poison pills. I plan to explore the within-country variation in anti-takeover provisions, e.g., the governance index in Bebchuk, Cohen, and Ferrell (2009), to test for this hypothesis. However, the impact of takeover defenses on gain division could prove hard to detect empirically, since a shadow pill could be as effective as an adopted pill (Coates, 2000). Even if we do not observe a positive impact of poison pills on target gains, the existence of the option to adopt this shareholder plan may pose a threat to potential bidders, and hence motivate an offer large enough to prevent possible defensive responses from the target's board. Therefor, it could be informative to investigate situations where the target is unlikely to adopt the legally allowed defensive measures, e.g., acquisitions of financially distressed firms.

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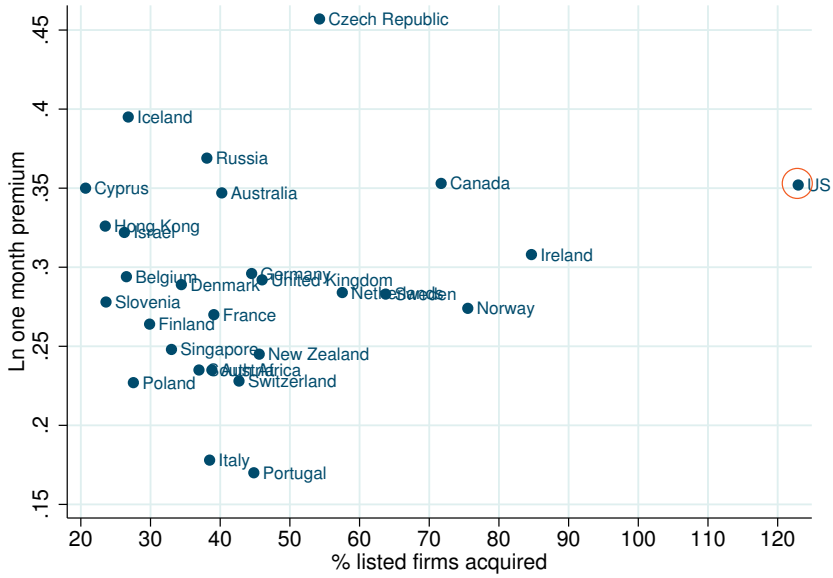
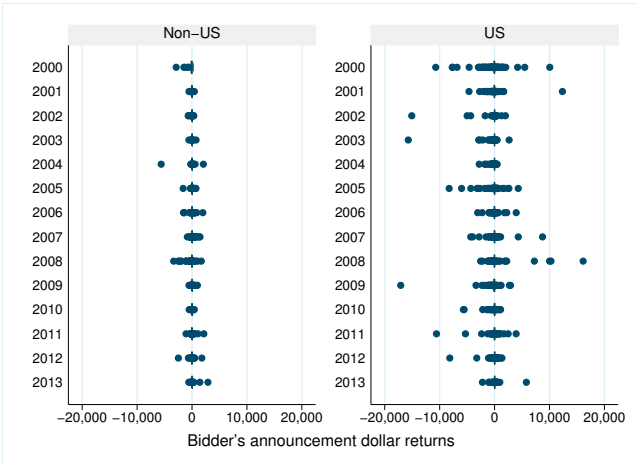
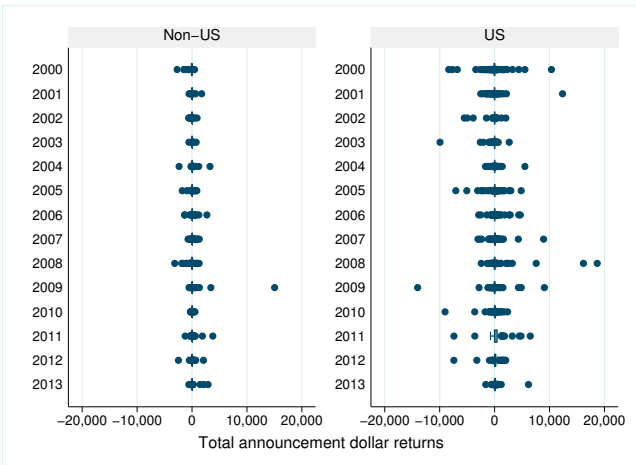


Figure 2.1: Average premium and takeover activities, by country, 2000-13



(a) Box plot of announcement dollar returns to acquirers



(b) Box plot of combined dollar returns upon announcement

Figure 2.2: Box plot of announcement dollar returns ($ million), US vs. non-US markets

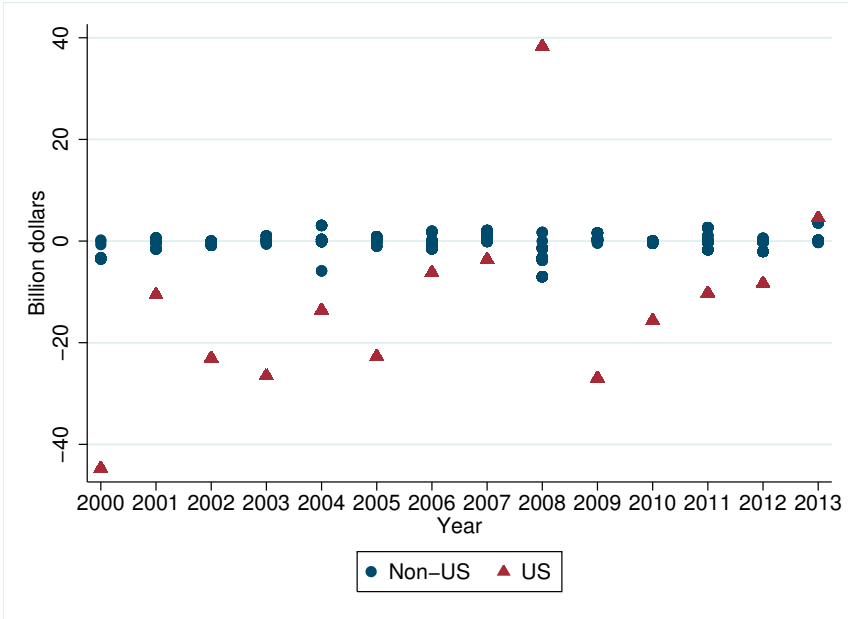
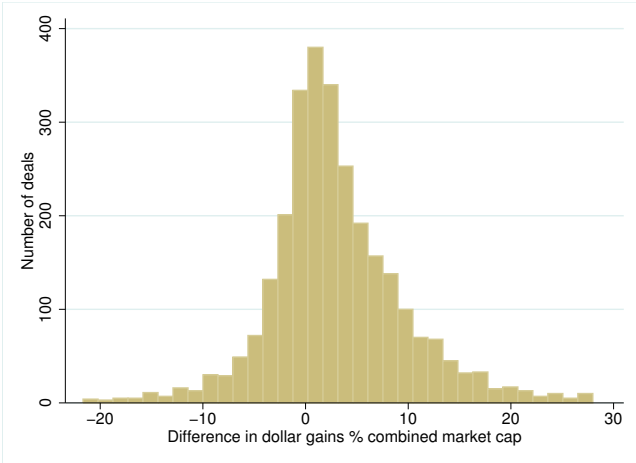
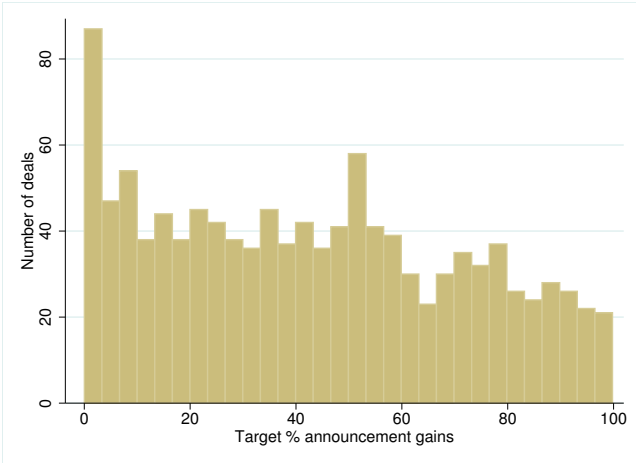


Figure 2.3: Aggregate announcement dollar returns to acquirers

Aggregate announcement dollar return is the sum of announcement dollar returns over the year, for each country, measured in billions of dollars.



(a) Relative target gains per dollar of total market value



(b) Gain division when both target and acquirer have positive gains

Figure 2.5: Distribution of the division of announcement gains

Figure 2.5a plots the difference in target gains relative to acquirer gains as a percentage of the combined market value (between the 1st and 99th percentiles), for all transactions. Figure 2.5b plots the target share in the combined gains for a subsample where both the acquired and acquiring firms earn positive dollar returns.

Table 2.1: Variable definitions

Panel A. Country-level variables

Variable	Description
% firms targeted	Proportion of domestic traded companies targeted in completing deals, computed for each target country for each year.
Deal value % market cap	Proportion of total value of successful deals to the target country's market capitalisation, computed for each target country for each year.
Anti-self-dealing	Average of ex-ante (capturing approval requirements and immediate disclosures) and ex-post (on ex post disclosure and the ease of proving wrongdoing) private control of self-dealing. The index specifically addresses the regulation of a transaction between two firms controlled by the same person that has the potential to improperly enrich the person in control. The higher the index, the more tightly self-dealing transactions are regulated, and thus, the better outside investors are protected.

Panel B. Individual deal-level variables

Variable	Description
US	Equals one if the (target) firm is located in the United States, and zero otherwise.
CAR (-1,1)	Announcement returns: three-day cumulative abnormal return (in percent) measured using the market model.
CAR (-42,1)	Total returns: cumulative abnormal return (in percent) over the entire event window (-42,1) measured using the market model.
CAR (-42,-2)	Run-up: cumulative abnormal return (in percent) over the window (-42,-2) measured using the market model.

Continued on next page...

... table 2.1 continued

Variable	Description
Announcement dollar returns	CAR (-1,1) multiplies by the firm market capitalisation the day before the announcement $$\$AR(-1,1)_j = CAR(-1,1)_j * m_{j,-1}$$
Total dollar returns	CAR (-42,1) multiplies by the firm market capitalisation 42 trading days before the announcement $$\$AR(-42,1)_j = CAR(-42,1)_j * m_{j,-42}$$
Combined dollar returns	Sum of target's dollar returns and acquirer's dollar returns $$\$AR_{Combined} = \$AR_{Target} + \$AR_{Acquirer}$$
Dollar returns/ Deal value	Dollar returns divided by the total transaction value.
Difference in dollar returns (%)	The difference between target's dollar returns and acquirer's dollar returns, divided by the total of both firms' market capitalisation 42 trading days before the announcement. $$\Delta\$AR = \frac{\$AR_{Target} - \$AR_{Acquirer}}{m_{Target,-42} + m_{Acquirer,-42}} * 100$$
Target % announcement gains	Target's percentage of the announcement dollar returns. $$\%\$AR_{Target} = \frac{\$AR_{Target}}{\$AR_{Combined}} * 100$$
Target size	Natural logarithm of the target's market capitalisation 42 trading days before the announcement.
Relative size	Target market capitalisation divided by acquirer market capitalisation, both measured at 42 trading days before the announcement.

Continued on next page...

... table 2.1 continued

Variable	Description
Small	Equals one if the size of target firm is below the 25th percentile, and zero otherwise.
BM high	Equals one if the target's book-to-market exceeds the industry median. Industry median is computed based on all firms targeted in the same industry (4-digit SIC code) in the same country.
52W-high	Percentage change in the target pre-deal stock price compared to its year high, measured as $P_{-42}/P_{52-weekhigh} * 100$
Toehold	Equals one if the acquirer owns shares in the target when announcing the bid
Horizontal	Equals one if the transaction is made by acquirers from the same (3-digit SIC code) industry as the target.
All cash	Equals one if the transaction is entirely paid in cash and zero otherwise.
Friendly	Equals one if the transaction is classified as friendly and zero otherwise.
Solicited bid	Equals one if the transaction is solicited by the target and zero otherwise.
Tender offer	Equals one if the transaction is done through a tender offer, and zero otherwise.
Industry	Classified based on 2-digit SIC codes of the target, as follows: **01 - 09** Agriculture, forestry and fishing; **10 - 14** Mining; **15 - 17** Constructions; **20 - 39** Manufacturing; **40 - 49** Transportation & public utilities; **50 - 51** Wholesale trade; **52 - 59** Retail trade; **60 - 67** Finance, insurance & real estate; **70 - 89** Services.

Data sources: All individual deal-level variables are obtained from S&P Capital IQ. Numbers of domestic listed firms, GNP per capita, market capitalisation %GDP, liquidity and stock turnover are obtained from World Development Indicators (World Bank database). The anti-self-dealing index is from Djankov et al. (2008). The takeover law and anti-takeover indices are from Nenova (2006).

Table 2.2: The US premium in global control contests

	Dependent Variable: Premium		
Independent Variables	(1)	(2)	(3)
US target	0.073***	0.044**	0.043**
	(0.006)	(0.019)	(0.020)
Anti-self-dealing		-0.053	-0.043
		(0.036)	(0.030)
Ln GDP			0.010*
			(0.006)
Value traded			0.003
			(0.006)
Competition			0.123
			(0.217)
Deal-level controls	Y	Y	Y
Observations	7,177	6,910	6,922
Adjusted R-squared	0.324	0.328	0.328
Controls	Yes	Yes	Yes
Number of countries	66	49	53

The dependent variable is one-month *premium*, computed as the logarithm of the ratio between the offer price and the target's closing price one month before the transaction announcement. US target takes value of one if the target is located in the United States, and zero otherwise. *Anti-self-dealing* (Djankov et al., 2008) proxies for legal investor protection. *Value traded* is the ratio of the value of the trades of domestic shares on domestic exchanges in the target country in the year before the deal to the country's GDP. *Competition* is the ratio of the total value of corporate control transactions in the year before the deal to the target country's market capitalisation. Deal-level controls describe the target, the acquirer and deal features. In particular, target characteristics include size (the logarithm of the target market capitalisation one month prior to the bid), an indicator variable for value stocks (BM-high), run-up (the change in target stock price over one month before the announcement), and 52W-high (the change in the target pre-deal stock price compared to its year high. Bidder-related controlling factors indicate whether the acquiring firm is listed, owns shares in the target when announcing the bid (toehold), or from the same industry as the target (horizontal). Deal characteristics contain a group of indicator variables for cross-border, entirely-cash-paid, friendly, solicited transactions, and tender offer. All regressions include an intercept, industry, year dummies, and are estimated by OLS. Standard errors (in parentheses) are clustered at target country level. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively.

Table 2.3: Economic and financial market development, 2000-12

Panel A. The US vs. the rest of the world

Variable	Non-US		US	
	Mean	Median	Mean	Median
GNP per capita	21216	14020	45111	48040
Market Cap % GDP	74.47	53.63	119.78	123.92
Liquidity	0.53	0.27	2.38	2.31

Panel B. Major takeover markets

Country	GNP per capita	Market Cap % GDP	Liquidity
Australia	34665	111.47	0.89
Canada	35170	113.75	0.82
France	34368	80.15	0.76
Germany	35134	46.19	0.61
Japan	38587	74.47	0.83
United Kingdom	36401	129.36	1.62
United States	45111	119.78	2.38

The table reports different measures of the development of the economy and the stock market, measured at year end, during the period 2000-2012. GNP per capita is measured in US dollar. Market Cap % GNP is the stock market capitalization as a percentage of gross domestic product. Liquidity is the total dollar value of stocks traded scaled by gross domestic product. Data are obtained from the World Bank database. Panel A presents the means and medians for the sample of 66 countries used in table 2.2. Panel B shows the averages for the seven major takeover markets.

Table 2.4: CARs by geographical location

	Announcement returns: CAR (-1,1)			Total returns: CAR (-42,1)		
	Target (1)	Bidder (2)	Combined (3)	Target (4)	Bidder (5)	Combined (6)
Asia/Pacific	14.467***	1.143***	2.650***	17.490***	1.812	3.184***
	(23.234)	(2.544)	(10.254)	(12.794)	(1.040)	(3.399)
Australia	17.577***	1.449**	4.100***	23.217***	2.820	5.532***
	(14.563)	(1.198)	(9.520)	(8.718)	(0.735)	(3.072)
Japan	12.657***	0.965**	1.855***	14.157***	1.226	1.897**
	(18.114)	(2.286)	(5.71)	(9.441)	(0.747)	(1.931)
Europe	12.583***	0.309*	1.262***	20.614***	1.861	2.974***
	(15.388)	(1.608)	(5.482)	(11.631)	(−0.407)	(2.848)
France	4.734***	1.117***	0.847	7.669**	0.715	4.093**
	(4.414)	(4.971)	(0.007)	(2.226)	(0.684)	(1.681)
Germany	10.944***	1.352***	2.096***	11.349***	4.924	−1.256
	(7.439)	(3.701)	(6.356)	(2.900)	(−0.891)	(−0.361)
UK	14.225***	−0.176**	1.156***	24.681***	1.602	3.684***
	(12.848)	(−2.557)	(3.519)	(11.403)	(−0.492)	(2.817)
North America	21.955***	0.489***	2.863***	29.420***	2.976	4.933***
	(49.863)	(−9.398)	(12.796)	(32.724)	(−0.961)	(7.166)
Canada	14.925***	−0.044**	1.401***	22.680***	2.206	3.372***
	(18.971)	(−2.866)	(3.214)	(11.343)	(−0.149)	(2.458)
US	23.843***	0.629***	3.239***	31.231***	3.177	5.335***
	(46.329)	(−9.089)	(12.718)	(30.980)	(−1.003)	(6.798)

The table shows average takeover gains by geographical location of the target firms. The gains are proxied by CAR(-1,1) for the announcement period and by CAR(-42,1) for the entire event. The combined gains (column (3) and (6)) are the market-value weighted CARs of the target and the bidder. z-statistics are reported in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.5: Descriptive statistics of announcement dollar returns

Panel A. Target's announcement dollar returns

Country	Mean	sd	p1	p50	p99	N
Australia	75.23	350.47	-17.98	7.76	2631.59	160
Canada	24.68	112.51	-43.51	3.05	495.49	496
France	113.89	577.48	-165.58	3.63	3262.29	32
Germany	438.33	2459.12	-1631.48	3.03	15375.24	40
Japan	36.84	142.18	-49.98	6.96	659.54	275
United Kingdom	33.40	93.89	-122.12	5.97	606.44	193
United States	136.32	635.49	-157.45	16.78	2551.61	1846
Total	103.12	583.72	-115.36	9.85	1797.34	3042

Panel B. Bidder's announcement dollar returns

Country	Mean	sd	p1	p50	p99	N
Australia	-10.92	211.90	-1163.62	0.52	420.66	163
Canada	-34.96	267.63	-1087.19	-0.28	364.92	486
France	-68.64	834.45	-5617.82	3.01	1686.60	62
Germany	53.79	413.66	-709.17	1.59	1967.03	39
Japan	32.99	407.04	-1405.72	2.30	2068.52	280
United Kingdom	-9.68	295.19	-1475.37	-0.44	860.97	187
United States	-90.79	1268.60	-4345.63	-2.45	2474.69	1863
Total	-59.30	1012.41	-2888.30	-0.71	1807.99	3080

Panel C. Combined announcement dollar returns

Country	Mean	sd	p1	p50	p99	N
Australia	64.83	340.51	-287.56	7.18	1301.82	146
Canada	-15.48	282.32	-1247.90	0.53	560.96	453
France	-102.50	552.44	-2355.53	1.77	777.70	31
Germany	516.95	2503.50	-912.81	5.81	15046.99	38
Japan	80.54	470.76	-774.80	8.85	2925.85	271
United Kingdom	26.79	307.35	-1487.95	4.24	1029.67	181
United States	43.56	1244.05	-3081.81	4.22	4400.78	1759
Total	42.45	1038.32	-2468.83	3.35	2925.85	2879

Announcement dollar returns (measured in millions) are calculated as the CARs (-1,1) multiplied by the firm market capitalization the day before the announcement. The combined dollar returns (panel C) is the sum of the target and bidder dollar returns.

Table 2.6: Announcement dollar returns per deal value, by geographical location

	Target (1)	Bidder (2)	Combined (3)
Asia/ Pacific	0.180***	0.059	0.233
Australia	0.266**	0.147	0.400***
Japan	0.127***	0.004	0.138
Europe	0.087***	0.958	0.129
France	0.038***	4.872	0.333
Germany	0.165*	-0.264	-0.095
United Kingdom	0.083***	0.028	0.130
North America	0.119***	0.052	-0.194
Canada	0.092***	0.703	0.000
United States	0.126***	-0.122	-0.245
Observations	2,860	2,908	2,735

The table shows average dollar gains per deal value from takeovers, by geographical location of the target firms. Announcement dollar returns per deal value are the dollar gains over the window (-1,1), divided by the transaction value. The measure represents the dollar gain per dollar spent on the takeover. Average gains for each region (country) are the coefficients of region (country) dummies in OLS regressions with takeover gains as the dependent variables. Standard errors (not reported) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.7: Division of takeover gains

Panel A. Difference in announcement dollar gains

Country	Mean	sd	p1	p50	p99	N
Australia	2.73	8.25	-12.19	2.40	18.03	146
Canada	2.33	8.35	-24.66	2.06	24.96	449
France	0.97	4.28	-4.99	0.24	10.84	31
Germany	0.13	6.21	-12.65	-0.38	13.99	38
Japan	0.41	5.14	-15.39	0.53	12.27	267
United Kingdom	2.34	7.80	-16.79	1.95	27.24	179
United States	10.86	473.58	-24.12	2.56	39.52	1,744
Total	7.34	370.21	-21.92	2.14	28.56	2,854

Panel B. Target % of gains when both firms have positive returns

Country	Mean	sd	p1	p50	p99	N
Australia	47.05	27.88	0.47	43.33	96.16	66
Canada	42.04	26.63	0.09	39.40	93.76	167
France	38.14	30.89	0.66	33.17	91.84	12
Germany	40.68	25.78	1.43	37.48	85.79	18
Japan	32.02	26.36	0.43	22.90	93.84	128
United Kingdom	41.12	30.88	0.51	34.85	98.65	77
United States	45.06	28.46	0.34	45.33	99.00	674
Total	42.86	28.33	0.38	41.25	98.32	1,142

In panel A, division of the announcement gains is measured by the difference in the announcement dollar gains between the target and the acquirer, as a percentage of the total market capitalisation of the acquirer and target 42 trading days prior to the announcement date, for all transactions. Panel B includes a sub-sample when both the bidder and the target have positive announcement dollar returns; division of gains is measured as the target's percentage of the announcement gains.

Table 2.8: Announcement CARs

Independent Variables	Dependent Variable: CAR (-1,1)		
	Target	Bidder	Combined
	(1)	(2)	(3)
US	9.952***	−1.467***	0.373
	(0.996)	(0.455)	(0.414)
Anti-self-dealing	8.014**	−3.851**	0.046
	(3.522)	(1.519)	(1.469)
Deal value % market cap	53.130	−17.871	−1.880
	(37.709)	(16.961)	(16.563)
Target CAR (-42,1)		0.043***	
		(0.010)	
Ln relative size	−2.953***	0.675***	1.175***
	(0.279)	(0.161)	(0.119)
BM high	2.780***	0.372	1.151***
	(0.795)	(0.385)	(0.330)
52W-high	−13.772***		
	(2.148)		
Toehold	−0.143	0.389	0.222
	(1.281)	(0.526)	(0.470)
Horizontal	1.711**	0.086	0.242
	(0.794)	(0.372)	(0.327)
All Cash	3.109***	2.322***	2.264***
	(0.950)	(0.435)	(0.382)
Friendly	−1.783	−0.160	−0.935
	(2.045)	(1.072)	(1.156)
Solicited Bid	−3.133*	5.465***	3.191***
	(1.759)	(1.121)	(0.992)
Tender Offer	3.995***	−0.437	0.283
	(1.055)	(0.426)	(0.387)
Constant	−9.767**	8.321*	3.740
	(4.528)	(4.938)	(2.510)
Observations	2,557	2,466	2,466
Adjusted R-squared	0.185	0.066	0.073

The dependent variable is the market-model adjusted abnormal returns cumulated over three days surrounding the takeover announcement. Combined returns are the market-value weighted CAR (-1,1) of the target and the acquirer. Variables are defined in table 2.1. All regressions include industry, year dummies, and are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively.

Table 2.9: Total CARs

Independent Variables	Dependent Variable: CAR (-42,1)		
	Target (1)	Bidder (2)	Combined (3)
US	10.274***	−2.907***	1.108
	(1.600)	(1.090)	(1.008)
Anti-self-dealing	26.331***	−1.357	8.029**
	(6.375)	(4.460)	(3.640)
Deal value % market cap	54.468	−34.141	15.300
	(62.347)	(43.124)	(38.399)
Target CAR (-42,1)		0.221***	
		(0.025)	
Ln relative size	−4.278***	2.650***	1.514***
	(0.528)	(0.385)	(0.286)
BM high	6.436***	0.956	4.045***
	(1.322)	(0.910)	(0.812)
52W-high	−39.818***		
	(3.713)		
Toehold	−1.447	1.320	1.307
	(2.129)	(1.399)	(1.371)
Horizontal	2.939**	−0.677	−0.018
	(1.279)	(0.892)	(0.804)
All Cash	2.241	2.394**	1.107
	(1.551)	(0.982)	(0.872)
Friendly	1.047	−0.704	−1.333
	(3.545)	(3.823)	(3.792)
Solicited Bid	−4.795	6.031***	3.982*
	(3.147)	(2.108)	(2.228)
Tender Offer	5.345***	−2.364**	−0.326
	(1.642)	(1.065)	(0.940)
Constant	−28.870***	3.298	−5.751
	(7.873)	(7.120)	(8.451)
Observations	2,557	2,466	2,466
Adjusted R-squared	0.195	0.133	0.037

The dependent variable is the market-model adjusted abnormal returns cumulated over the $(-42, 1)$ window. Combined returns are the market-value weighted CAR (-42,1) of the target and the acquirer. Variables are defined in table 2.1. All regressions include industry, year dummies, and are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.10: Target run-ups

	Dependent Variable: CAR (-42,-2)		
	(1)	(2)	(3)
US	0.981	0.624	0.006
	(1.221)	(1.258)	(1.254)
Anti-self-dealing		17.761***	
		(4.790)	
Deal value % market cap		−5.569	
		(31.334)	
Ln relative size	−1.095***	−1.228***	−1.102***
	(0.401)	(0.417)	(0.408)
BM high	3.238***	3.334***	3.444***
	(1.061)	(1.098)	(1.082)
52W-high	−24.414***	−24.692***	−23.913***
	(2.807)	(2.919)	(3.016)
Toehold	−3.269*	−1.880	−3.634**
	(1.697)	(1.827)	(1.698)
Horizontal	0.534	0.782	0.952
	(1.025)	(1.055)	(1.061)
All Cash	−2.102*	−1.957	−1.127
	(1.154)	(1.197)	(1.267)
Friendly	0.956	2.601	0.992
	(3.369)	(3.471)	(3.527)
Solicited Bid	−1.254	−1.261	−0.608
	(2.208)	(2.471)	(2.308)
Tender Offer	2.944**	1.822	2.596*
	(1.308)	(1.369)	(1.346)
Constant	−7.317**	−20.482***	−2.451
	(3.687)	(5.191)	(5.356)
Observations	2,834	2,685	2,703
Adjusted R-squared	0.069	0.073	0.073

The dependent variable is the target runups, calculated as the market-model adjusted abnormal returns cumulated over window $(-42, -2)$. Variables are defined in table 2.1. All regressions include industry, year dummies, and are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.11: Announcement dollar returns/ deal value

Independent Variables	Dependent Variable: Announcement dollar returns/ Deal value		
	Target (1)	Bidder (2)	Combined (3)
US	0.041***	−0.112	−0.080
	(0.006)	(0.071)	(0.070)
Anti-self-dealing	0.034	−0.134	−0.063
	(0.026)	(0.305)	(0.314)
Deal value % market cap	0.148	−1.061	0.738
	(0.254)	(2.965)	(2.888)
Target CAR (-42,1)		0.000	
		(0.002)	
Ln relative size	−0.013***	0.052	0.057
	(0.002)	(0.046)	(0.043)
BM high	−0.001	0.001	0.008
	(0.005)	(0.072)	(0.068)
52W-high	−0.023*		
	(0.012)		
Toehold	0.041***	0.025	0.124
	(0.009)	(0.142)	(0.137)
Horizontal	0.006	0.052	0.062
	(0.005)	(0.068)	(0.066)
All Cash	0.032***	0.224***	0.280***
	(0.006)	(0.086)	(0.084)
Friendly	0.010	−0.219	−0.188
	(0.013)	(0.196)	(0.201)
Solicited Bid	−0.038***	0.028	−0.024
	(0.009)	(0.114)	(0.108)
Tender Offer	0.027***	−0.110	−0.094
	(0.006)	(0.103)	(0.103)
Constant	0.039	0.222	0.263
	(0.071)	(0.424)	(0.454)
Observations	2,445	2,371	2,371
Adjusted R-squared	0.133	0.001	0.006

The dependent variable is the announcement dollar returns divided by the total transaction value. The measure represents the dollar gain per dollar spent on the takeover. Variables are defined in table 2.1. All regressions include industry, year dummies, and are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.12: Division of takeover gains

	Dependent Variable			
	Difference in dollar gains		Target % of gains	
Independent Variables	Announcement (1)	Total (2)	Announcement (3)	Total (4)
US	2.101***	1.465*	9.709***	3.512**
	(0.350)	(0.763)	(2.057)	(1.768)
Anti-self-dealing	4.096***	2.268	8.379	18.214**
	(1.369)	(3.082)	(8.594)	(7.172)
Deal value % market cap	34.529**	6.786	134.164	169.365**
	(14.084)	(32.847)	(91.071)	(77.077)
Ln relative size	0.699***	0.471**	7.800***	8.631***
	(0.096)	(0.221)	(0.454)	(0.382)
BM high	0.348	−1.016	2.016	2.661*
	(0.284)	(0.623)	(1.617)	(1.425)
Toehold	0.208	0.145	2.018	−0.054
	(0.461)	(1.036)	(2.367)	(2.393)
Horizontal	0.029	0.800	−0.591	2.214
	(0.298)	(0.639)	(1.602)	(1.423)
All Cash	−1.509***	−1.506**	0.123	−4.021**
	(0.325)	(0.743)	(1.949)	(1.647)
Friendly			−1.254	0.945
			(5.204)	(5.406)
Solicited Bid	−2.733***	−2.666**	−6.185**	−3.979**
	(0.567)	(1.259)	(2.540)	(2.015)
Tender Offer			2.972	2.522
			(2.049)	(1.664)
Constant	−2.223	−2.752	47.711***	36.979***
	(2.510)	(5.689)	(11.373)	(11.558)
Observations	2,466	2,466	957	1,040
Adjusted R-squared	0.081	0.021	0.302	0.384

In columns (1) and (2), the dependent variable is the difference in dollar gains, and all transactions are included. In columns (3) and (4), the dependent variable is the target's percentage of takeover gains, and the sample includes only takeovers where both firms have positive abnormal dollar returns. Variables are defined in table 2.1. All regressions include industry, year dummies, and are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.13: Takeover gains: the US vs. other markets

	Dependent Variable: Announcement gains							
	CAR			Dollar returns/ Deal value			Difference in dollar gains	Target % of gains
	Target	Bidder	Combined	Target	Bidder	Combined		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Australia	−5.260***	1.576**	1.326*	−0.012	0.143	0.253**	−1.155*	−9.223***
	(1.749)	(0.761)	(0.734)	(0.012)	(0.125)	(0.129)	(0.599)	(3.443)
Canada	−6.118***	0.918	−0.092	−0.030***	0.043	0.033	−0.971*	−6.566**
	(1.549)	(0.666)	(0.630)	(0.009)	(0.082)	(0.081)	(0.543)	(2.956)
France	−15.185***	0.990	−2.680***	−0.091***	−0.048	−0.153	−3.277***	−19.203**
	(2.309)	(0.963)	(0.876)	(0.018)	(0.115)	(0.116)	(0.877)	(8.095)
Germany	−11.415***	2.645**	−0.610	−0.058*	−0.095	−0.098	−4.501***	−11.681*
	(2.957)	(1.287)	(1.250)	(0.034)	(0.400)	(0.455)	(1.100)	(6.632)
Japan	−14.740***	2.956***	−0.126	−0.052***	0.287**	0.186	−3.733***	−15.175***
	(1.218)	(0.620)	(0.524)	(0.009)	(0.139)	(0.131)	(0.465)	(2.536)
United	−9.520***	0.287	−0.959	−0.044***	0.016	−0.043	−1.381**	−7.989**
Kingdom	(1.631)	(0.670)	(0.659)	(0.009)	(0.108)	(0.109)	(0.606)	(3.735)
Observations	2,703	2,606	2,606	2,589	2,509	2,509	2,606	1,017
Adj. R-squared	0.183	0.063	0.071	0.136	0.001	0.006	0.082	0.300

The dependent variables are measures of takeover gains and gain division, over the window $(-1,1)$, Winsorized at the 1st and 99th percentiles. The country coefficients reflect the difference in gains, and gain division in comparison to the US. Unreported controls include log relative size, BM-high, toehold, horizontal, all cash, friendly, solicited bid, tender offer, industry and year dummies. In addition, columns (1) and (4) also control for 52W-high; columns (2) and (5) control for target CAR(-42,1). Variables are defined in table 2.1. All regressions are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.14: Takeover gains: the US vs. the English legal origin

	Dependent Variable: Announcement gains							
		CAR			Dollar returns/ Deal value		Difference in	Target %
	Target	Bidder	Combined	Target	Bidder	Combined	dollar gains	of gains
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. Non-US markets								
Anglo-saxon	11.203***	-0.824	1.733	0.042*	-0.182	0.089	3.234***	7.109
	(3.353)	(1.287)	(1.344)	(0.025)	(0.226)	(0.220)	(1.159)	(6.981)
Observations	971	925	925	943	885	885	925	387
Adj. R-squared	0.140	0.018	0.039	0.127	0.010	0.000	0.052	0.272
Panel B. Takeover markets with English legal origin								
US	5.906***	-0.876	-0.023	0.032***	-0.041	-0.047	1.017*	6.178**
	(1.539)	(0.680)	(0.641)	(0.010)	(0.079)	(0.079)	(0.535)	(3.077)
Observations	2,248	2,163	2,163	2,195	2,093	2,093	2,163	812
Adj. R-squared	0.176	0.067	0.078	0.096	-0.001	0.006	0.074	0.294

The dependent variables are measures of takeover gains and gain division, over the window $(-1, 1)$, Winsorized at the 1st and 99th percentiles. Anglo-saxon is a dummy variable which equals one for countries with English legal origin, and zero otherwise. Unreported controls include anti-self-dealing index, deal value % market capitalisation, log relative size, BM-high, toehold, horizontal, all cash, friendly, solicited bid, tender offer, industry and year dummies. In addition, columns (1) and (4) also control for 52W-high; columns (2) and (5) control for target CAR(-42,1). Variables are defined in table 2.1. All regressions are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 2.15: Takeover gains and firm size

	Dependent Variable: Announcement gains							
	CAR			Dollar returns/ Deal value			Difference in dollar gains	Target % of gains
	Target	Bidder	Combined	Target	Bidder	Combined		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
US	8.901***	−1.705***	0.228	0.039***	−0.091	−0.056	2.207***	8.927***
	(1.070)	(0.464)	(0.412)	(0.006)	(0.076)	(0.075)	(0.351)	(2.113)
Small	−0.618	2.037**	2.425***	−0.022**	0.052	0.036	−0.405	−8.364**
	(2.040)	(0.801)	(0.757)	(0.011)	(0.104)	(0.104)	(0.706)	(3.416)
US x Small	12.892***	3.775***	2.346**	0.002	−0.181	−0.201	−0.939	3.280
	(4.870)	(1.330)	(1.196)	(0.016)	(0.243)	(0.236)	(0.989)	(4.332)
Observations	2,557	2,466	2,466	2,445	2,371	2,371	2,466	957
Adj. R-squared	0.140	0.095	0.101	0.135	0.000	0.006	0.083	0.309

The dependent variables are measures of takeover gains and gain division, over the window $(-1,1)$, Winsorized at the 1st and 99th percentiles. Small is a dummy variable equalling 1 if the target size is below the 25th percentile, and zero otherwise. Unreported controls include log relative size, BM-high, toehold, horizontal, all cash, friendly, solicited bid, tender offer, industry and year dummies. In addition, columns (1) and (4) also control for 52W-high; columns (2) and (5) control for target CAR(-42,1). Variables are defined in table 2.1. All regressions are estimated by OLS. Standard errors (in parentheses) are robust to heteroskedasticity. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

PAPER 3

EXECUTIVE COMPENSATION IN FOUNDATION-CONTROLLED FIRMS

Van Diem Nguyen[*]

Abstract
In general, a large shareholder can discipline the manager by monitoring and/or incentivizing through compensation contracts. In foundation-controlled (FC) firms, the controlling shareholder, i.e., the foundation, does not personally consume cash flow rights, and hence has weaker incentives to monitor the manager, ceteris paribus. I find evidence of the substitution of compensation for monitoring based on a sample of 193 Swedish family firms listed on the Stockholm Stock Exchange during the period of 2001 – 2009. A family can control a firm either directly or through the establishment of a foundation. In the latter case, the family would donate their shareholdings to the foundation and thus give up their claims on the resulting cash flow rights. Compared to non-foundation family firms, foundation family firms reward their CEOs more. While base salary and bonus are equally competitive, foundation family firms strengthen the performance pay schemes by increasing the proportion of variable compensation and pay sensitivity to performance. The results are robust to various effects including managerial ownership, family CEO and supplementary monitoring by other large shareholders.

Keywords: Executive compensation, ownership, foundation, corporate governance

JEL classification: G32, G34, J33, L31

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3.1 Introduction

Concentrated ownership is a direct way to align cash flow and control rights of outside investors, since large shareholders have both interest in value maximization and sufficient control over firm assets to protect their interest (Shleifer and Vishny, 1986, 1997). However, when large shareholders are abstained from cash flow rights, what alternative mechanisms are in place to alleviate this governance handicap? This paper empirically investigates a setting where concentrated ownership lacks cash flow rights, i.e., foundation–controlled (FC) firms, and finds evidence supporting the hypothesis that high-incentive managerial compensation serves as a substitution for shareholder monitoring. The study is based on 193 Swedish listed family firms during the period of 2001–2009.

Blockholdings are the norm almost everywhere in the world (La Porta, de Silanes, and Shleifer, 1999), and according to recent evidence, they also dominate US public firms (Holderness, 2009). Though evidence on large shareholders exercising their governance role is widespread, concentrated ownership has its cost in the form of potential expropriation by large shareholders of minority investors and stakeholders in the firm (Shleifer and Vishny, 1997). This cost could outweigh the disciplining benefit when shareholder control rights significantly exceed their cash flow rights, by means of various control arrangements such as cross-shareholdings, differential voting rights, and pyramids. Dyck and Zingales (2004) document that private benefits of corporate control vary largely across countries, and average 14 percent of the equity value of a firm. Villalonga and Amit (2006) find that in firms run by descendant–CEOs, the conflict between family and nonfamily shareholders is more costly than that between shareholders and managers in nonfamily firms.

When large shareholders do not have cash flow rights, the disciplining benefit vanishes and the cost of concentrated ownership reaches its maximum. Large shareholdings of foundations and other nonprofit organisations in common–for–profit firms are exhibitions

of such ownership structure. This rather extreme structure is not uncommon in practice, and indeed features in many large and prominent corporations in Northern Europe (Thomsen, 1996; Hansmann and Thomsen, 2011). In the US, nonprofits also play an important economic role, especially in hospital care (Malani, Philipson, and David, 2003; Hansmann, 2009). The viability of these firms suggest alternative mechanisms are effective in disciplining managers. However, little work is done on the governance of firms controlled by nonprofits. Based on a sample of 113 Danish firms of which foundations have outright control, Hansmann and Thomsen (2011) investigate the relationship between firm performance and the governance structure of their parent foundations. They find that firm profitability increases in the extent to which the foundation board of directors is separate from direct involvement in the firm management. Hansmann and Thomsen (2011) argue this "managerial distance", analogous to board independence, encourages FC firms to behave more like those under profit–maximising owners. Bøhren and Josefsen (2013) study Norwegian banks in which no stakeholders have both cash flow and control rights, and find evidence of the substitution of market product competition for shareholder monitoring.

This paper addresses the internal governance of firms controlled by nonprofits through an analysis of executive compensation in Swedish listed firms where foundations represent their controlling shareholders. Foundations are autonomous non-profit entities that do not consume all of the cash flow rights obtained from their holding, but redistribute a majority proportion for charitable purposes, aimed at enhancing social welfare. Foundations themselves have no owners. They are run by boards of directors who are often self-selected and constrained only by law and their charters (Thomsen, 1996). The absence of security benefits for foundations, the controlling shareholder, makes FC firms prone to a twin governance problem, the manager–owner conflict of ownership dispersion (Jensen and Meckling, 1976), and the within–shareholder conflict of concentrated ownership (Bebchuk,

Kraakman, and Triantis, 2000).

I present a simple framework where managerial monetary incentives and shareholder monitoring work as alternative governance devices. The manager has moral hazard of shirking. To induce the manager effort, the shareholder in non–FC firms can choose between incentive contracts and direct monitoring. Incentive contracts involve a revenue sharing rule between the shareholder and the manager, and require the shareholder to leave sufficient rent to the manager. Monitoring involves a nontransferable monitoring cost for the shareholder. The shareholder chooses the option that minimizes the cost of inducing the manger's effort. However, in FC firms, since foundations are refrained from firm residual claims, direct monitoring is killed off, leaving incentive contracts as the only option for the foundation to discipline the manager. These results imply two testable predictions. First, compared to non–FC firms, FC firms rely more heavily on incentive contracts. Second, shareholder returns on invested capital in FC firms are lower than in non–FC firms.[1] This is because for non–FC firms, they can use direct monitoring to induce the manager's effort when monitoring cost is low, while for FC firms, they can only rely on managerial compensation even if it is relatively costly compared to monitoring.

I empirically test these predictions using a sample of 193 Swedish listed family firms from 2001 to 2009, a total of 1241 firm-year observations. A family can control a firm either directly or through a foundation. In the latter case, the family would donate their shareholdings to the foundation and thus give up their personal consumption of the resulting cash flow rights. Family firms under foundation control account for about 10 percent of the sample, but represent 25 percent of the top size quartile. This highlights the economic importance of FC firms in Sweden. I find that executive compensation is larger

[1]This model abstracts from the trade–off between control and managerial initiative analysed in Burkart, Gromb, and Panunzi (1997). Allowing for initiative can influence the model implication on comparative shareholder returns between FC and non–FC firms, since the initiative effect can dominate the control effect, and foundation control, analogous to dispersed ownership, acts as a commitment device to delegate control to management and hence preserves initiative.

and performance–based incentive schemes are stronger in FC firms than in non–FC firms. The pay differential is driven by the more pronounced use of options in FC firms. The results are robust to various effects including managerial ownership, family CEO, creditor monitoring and supplementary monitoring by other blockholders. Shareholder returns on invested capital, as measured with ROA and ROE, are not higher in FC firms than in non–FC firms. The results are consistent with the substitution of incentive contracts for monitoring.

The paper contributes to the literature on corporate governance in general, and governance of nonprofits in particular. Agrawal and Knoeber (1996) examine multiple governance mechanisms including managerial ownership, large shareholdings, outside directors, debt policy, the managerial labor market, and the market for corporate control. They find evidence of interdependence among these mechanisms and support the view that firms generally choose governance mechanisms optimally. FC firms are immune to both monitoring and takeover threats, and hence present a fairly unique setting to test for the power of alternative disciplining devices. Bøhren and Josefsen (2013) compare ownerless banks to those owned by regular stockholders, and propose pressure from product market competition as a remedy for inadequate monitoring. Market competition, though effective, does not make corporate governance superfluous (Shleifer and Vishny, 1997). Competition may reduce the amount available for expropriation but does not prevent the manager from expropriating the competitive return after production capital is sunk. This suggests that there is room for other mechanisms in governing ownerless firms. This paper provides empirical evidence supporting the hypothesis that incentive contracts and monitoring are substitutes. Performance–based schemes are stronger in FC firms than in non–FC firms. The finding is robust to insider holdings and pressure from the capital market. Given the presence of FC firms in various industries, I also control for product market competition through inclusion of industry effects, and the use of industry–adjusted compensation.

The paper also adds to the literature on ownership and control, particularly the strand on foundations and other nonprofits. Existing work on ownerless firms mainly focuses on their economic performance relative to that of stockholder–owned firms, and in general does not detect any profitability discount associated with this virtual ownership (Thomsen, 1996; Bøhren and Josefsen, 2013). Nevertheless, cross-sectional estimates of ownership impact on performance are not free from endogeneity.[2] This paper investigates the internal governance of FC firms and supports the view that ownerless firms employ alternative disciplining devices to substitute for monitoring. The fact that ownerless firms resort to alternative governance mechanisms may explain their competitive performance to firms with traditional ownership structure.

The remainder of the paper is organized as follows. Section 3.2 develops the model and its testable implications. Section 3.3 describes the data. Section 3.4 presents the empirical analysis. Section 3.5 offers concluding remarks.

3.2 The model

I begin with a simple model that incorporates moral hazard. There are two players, the shareholder and the manager. With an investment of I in a project at time $t = 0$, this project, at time $t = 1$, produces a cash flow of R in the case of success and 0 in the case of failure. The probability of success is p_H if the manager works and $p_L = p_H - \Delta_p$ if she shirks. Shirking provides the manager with private benefit $B > 0$. For instance, the manager can divert the firm resources for personal use, select a costly supplier on friendship or kinship grounds, or involve in some other forms of self-dealing. I assume that,

$$p_L R < I < p_H R - \min(\frac{p_H B}{\Delta_p}, c_S). \tag{3.1}$$

[2]FC firms may have distinct unobservable characteristics which affect firm performance. Even with panel data, using fixed effects is infeasible due to the stable structure of ownership over time.

This condition implies (i) the project has positive NPV only if the manager works, and (ii) the project is sufficiently profitable to cover the disciplining cost. That is, inducing effort is both desirable and feasible.

The shareholder can either incentivize the manager to work using a compensation contract, or directly monitor her to prevent shirking. For the first option, the contract simply specifies that the manager gets a share of the cash flow in the case of success. The manager must be compensated in such a way that she is willing to forgo the private benefit. Let r be the payment to the manager if the cash flow is R, this payment must satisfy manager's incentive compatibility (IC) constraint, i.e.,

$$\begin{aligned} & p_H r \geq p_L r + B \\ \Rightarrow & r \geq \frac{B}{\Delta_p}. \end{aligned}$$

In equilibrium, the IC constraint binds, i.e., $r = \frac{B}{\Delta_p}$ is sufficient for the manager to work. Then the shareholder expected payoff is

$$\Pi_S = p_H(R - \frac{B}{\Delta_p}). \tag{3.2}$$

If the shareholder selects the second option, direct monitoring, he incurs a personal cost $c_S > 0$, but does not have to share revenue with the manager in the case of success. Thus he receives the following payoff,

$$\Pi_S = p_H R - c_S. \tag{3.3}$$

In the case of non-FC firms, by comparing (3.2) and (3.3), the shareholder will choose the option that gives them larger expected payoff. Therefore, the shareholder selects incentive

contract if the agency rent is lower than the monitoring cost, i.e.,

$$\frac{p_H B}{\Delta_p} \leq c_S, \tag{3.4}$$

and selects monitoring otherwise.

In the case of FC firms, the foundation refrains from the firm's residual cash flows, and hence monitoring would leave the foundation with a negative payoff. Therefore, the foundation can only use incentive contracts. The foundation expected payoff is given by (3.2).

Suppose the monitoring cost is low for some firms, i.e., $c_S < \frac{p_H B}{\Delta_p}$, and high for others, i.e., $c_S \geq \frac{p_H B}{\Delta_p}$. Non–FC firms with low monitoring cost will choose monitoring and receive expected payoff as given by (3.3), which is larger than (3.2). This has two implications for the cross-sectional comparison of FC firms against non-FC firms. First, FC firms, on average, rely on incentive contracts more than non-FC firms. Second, in firms where monitoring is less costly than using compensation, the shareholder payoff is also larger. Therefore, on average, shareholder returns on invested capital are not higher in FC firms than in non-FC firms.

3.3 Data

The sample combines data on CEO compensation, firm ownership structure and financial data for Swedish firms listed on the OMX during the period 2001–2009. Table 3.1 describes all variables and their sources.

3.3.1 Executive compensation and CEO characteristics

Information on CEO salary, bonus, option holdings at the end of the year, CEO age and tenure are hand-collected from annual reports. When data on exercise price, maturity and grant date are not available, I assume that options were granted on the first trading day of January, at a strike price equal to the closing price on that day, and with 6 year maturity. At-the-money options are the most employed by firms in practice, and this is fairly standard in the compensation literature (Smith and Zimmerman, 1976; Murphy, 1985). My assumption of option maturity is based on the average CEO tenure in Swedish public firms during the study period. When total option holdings of a CEO change over years and no information is available to trace new grants, the exercise or expiry of existing options, I assume additional options are new grants. The value of CEO options held at the end of year τ is approximated as:

$$\text{Option value}_{\tau} = \sum_{t=0}^{\tau} N_t C_{\tau}^{t} \tag{3.5}$$

where N_t is the number of options granted in year t, at strike price K_t; C_{τ}^{t} is the value of an option granted in year t, evaluated at the end of year τ using the Black and Scholes (1973) formula for valuing European call option on a dividend paying stock (Jensen and Murphy, 1990; Mehran, 1995).[3]

Total compensation is the sum of salary, bonus and value of option grants. I construct two proxies for the incentive component of CEO remuneration, namely *variable compensation* and *option sensitivity*. The former is the proportion of bonus and option to total compensation. The latter measures the performance sensitivity of the stock option award, and is computed as the change in value of the CEO option grant in response to a SEK

[3] Modified by Merton (1976) to allow for continuous dividend yield on the underlying stock.

1,000 increase in shareholder wealth (Yermack, 1995),

$$\text{Option sensitivity} = \Delta \frac{\text{Shares in option award}}{\text{Shares outstanding}} \text{SEK } 1,000 \tag{3.6}$$

where $\Delta = \frac{\partial C}{\partial S}$ is the Black-Scholes hedge ratio, measuring how the option value (C) changes with respect to the underlying stock price (S). In addition, I use an indicator variable, *option*, which equals one if the CEO holds options and zero otherwise. This variable is based solely on the original data from annual reports, and hence free from all the assumptions made in estimating option value.

3.3.2 Ownership structure, corporate governance, and other firm characteristics

Data on shareholdings are obtained from the series of "Owners and Power in Sweden's listed Companies" by Fristedt and Sundqvist (2002–2009), for the years 2001–2008, and from annual reports for 2009.[4] Information provided by Fristedt and Sundqvist are as of February of the publishing year, hence, ownership information for year t are collected from the issue at year $t+1$. The database provides the identity, voting rights, and cash flow right of the 25 largest owners, ranked according to voting percentages, and when applicable, in spheres of common interest. Shares held by family members and other closely related owners, including indirect holdings through trusts, custodian banks and holding companies are summarized into a single record. For example, Hennes & Mauritz, the most valuable company of 2007, is 72.5% controlled by the Persson family. This includes 69.1% of votes from Stefan Persson family and company, 2.6% from his sister, Lottie Tham, and family, 0.6% and 0.2% from his two nephews, Jan Bengtsson and Stefan Bengtsson, respectively.

[4]The last printed publication of "Owners and Power in Sweden's listed companies" is in 2009. The database provides ownership information on firms listed on the Stockholm Stock Exchange or the NGM, except for those with foreign legal entity (e.g. ABB, AstraZeneca, as of 2009).

A firm is classified as having a controlling shareholder if a shareholder's direct and indirect voting rights sum up to at least 10 percent. Indirect control is measured as in La Porta, Lopez-de Silanes, Shleifer, and Vishny (2000). The cutoff value of 10 percent is frequently used in the literature as a sufficient level to exert control (La Porta et al., 2000; Faccio and Lang, 2002). When multiple shareholders have more than 10 percent of the voting rights, control is assigned to the one with the largest voting stake.

Control categories are defined based on the identity of the controlling shareholder. A firm is classified as FC if the controlling shareholder is a foundation or a group of foundations. For instance, the major shareholder in Atlas Copco as of February 2009 is Investor AB, which in turn, is controlled by the Wallenberg Foundations. Then both Investor AB and Atlas Copco are categorized as FC. The term foundation used in the study refers to *avkastningsstiftelse*, nonprofit organizations, qualified as foundations according to the Foundation Act (Stiftelselagen, 1994), whose income is required to be distributed about 80% to qualified purposes concerning public benefit.[5] Since the paper focuses on the absence of cash flow rights for the principal shareholder, I exclude employee-based foundations where the principals, i.e., future recipients of donations, are employees, and thus benefit directly from their involvement or contribution (e.g., the Handelsbanken group).

In the empirical analysis, I focus on the foundation presence within family controlled companies. First, family foundations constitute the majority of the controlling foundations for listed firms in the study period. Second, family ownership and control influence firm behavior such as performance, capital structures and CEO pay (Villalonga and Amit, 2006; King and Santor, 2008; Combs, Penney, Crook, and Short, 2010). The final sample consists of 193 firms, resulting in a panel of 1,241 firm year observations.

[5] Appendix A provides an example of foundation establishment, development, management and activities.

I measure corporate governance with several proxies related to ownership structure. One measure is the percentage of cash flow right of the largest shareholder, which captures the incentives of the principal owner in monitoring the manager. The second measure is the wedge between control and cash flow rights of the largest shareholder, which captures the entrenchment effect of ownership concentration (Claessens, Djankov, Fan, and Lang, 2002; Adams and Giannetti, 2012). Control in excess of cash flow rights might translate into higher pay for the CEO, if the large shareholder and the CEO participate in the extraction of private benefits (Cronqvist and Nilsson, 2003). Finally, I construct a dummy variable *other block* to proxy for potential monitoring by other large shareholders. The variable equals one if the second largest owner of the firm has at least 10 percent voting rights, and zero otherwise.

Financial data, firm age, industry code, and stock prices are obtained from Datastream. Financial data are used to compute a set of firm characteristics commonly known to affect compensation as in Murphy (1985, 1999); Smith and Watts (1992); Mehran (1995); Core, Holthausen, and Larcker (1999), including size (proxied by the natural logarithm of total assets), growth opportunity (measured by Tobin's Q), performance (annualized stock returns), leverage and volatility . Firm age is used to proxy for potential involvement of founders in firm management, since founders can impact firm governance and behavior (Anderson and Reeb, 2003; Villalonga and Amit, 2006; Fahlenbrach, 2009).

3.3.3 Descriptive statistics

In table 3.3, I provide the summary statistics for executive compensation, ownership structure, firm and CEO characteristics. The sample is split by whether or not foundations represent the firm controlling shareholder. I test for differences in means with the t-test and differences in medians with the Wilcoxon rank-sum test (test statistics and significance levels are reported).

On average, CEOs receive about 2.7 million of fixed salary, 0.7 million of bonus, and after adding value of option grant, SEK 5 million (equivalent to USD 0,65 million) in total.[6] Pay practice, however, varies largely across firms as the median CEO receives about 2 million of salary, no bonus and an aggregate remuneration package of 2.5 million. Variable compensation, on average, accounts for 22% of total pay. These statistics are generally comparable to those reported by Adams and Giannetti (2012) who analyzed executive compensation in Swedish listed firms in 2005. CEOs in FC firms earn significantly more than those in non–FC firms, by all measures of compensation.

In terms of ownership and governance, deviation from the one share–one vote structure is large and common. On average, families have 40 percent of the votes whilst they own just 28 percent of the firm value. Both control and cash flow rights are more concentrated in non–FC firms. However, the wedge between control and cash flow rights does not significantly differ from that in FC firms. Managerial ownership is generally modest, especially in FC firms.

Firm size marks the most prominent difference between FC and non–FC firms. In addition, non–FC firms are younger, have lower leverage, higher Q and more volatile stocks than FC firms.

The distribution of FC firms across industries is non-uniform (table 3.2). They account for 56 percent of construction, 12 percent in finance, insurance and real estate, 11 percent in manufacturing, 5 percent in services, and are completely absent in mining and trade. Table 3.2 also reports firm characteristics by industry, measured at medians.

[6]Conversion is based on the Riskbank's 2009 average annual exchange rate.

3.4 Empirical analysis

3.4.1 Executive compensation and foundation control

The model developed in section 3.2 predicts a positive relationship between foundation control and incentive contracts. To test this hypothesis, I begin with a baseline model as follows,

$$\text{Compensation} = \alpha + \beta \text{Foundation} + C'\delta + \gamma_t + \varepsilon, \tag{3.7}$$

where the dependent variables are different measures describing CEO compensation level and structure, *foundation* is an indicator variable for FC firms, and C is a set of firm characteristics.

Total compensation consists of base salary and performance pay. The latter is further decomposed into two components based on time horizon, the short–term incentive, bonus, and the long–term incentive, option grants. In the empirical analysis, total compensation, salary and bonus are all in logarithm.[7] I use two measures for the long-term incentive, the indicator variable *option*, and the option sensitivity to firm performance. I proxy for aggregate performance–based incentive scheme with *variable compensation*, i.e., the proportion of bonus and option value to total compensation.

When the dependent variable is either salary, bonus, or total compensation, the estimation approach is pooled OLS. I prefer OLS over fixed effects regression because fixed effects approach may fail to capture the individual impact of variables that do not vary much over time even if a relation exists (Zhou, 2001). The key explanatory variable of interest, foundation control, remains stable during the study period. Foundations rarely lose their position as the controlling shareholder in the firm once in place. Since variable compensation is bounded by zero and unity, OLS estimator will be biased and inconsistent.

[7] I use $ln(1 + bonus)$. Adding one, on one hand, does not affect the actual amount, on the other hand, helps to retain observations with zero bonus under the logarithm transformation.

Hence, I rely on the quasi-likelihood method for estimation with fractional dependent variable described by Papke and Wooldridge (1996). When the dependent variables are option and option sensitivity, I use probit and Tobit estimation, respectively.

As seen in table 3.3, FC and non-FC firms differ substantially in important pay related firm characteristics and corporate governance measures. Therefore, I include the following as control variables: firm size (natural logarithm of total assets), growth opportunity (*Q*), performance (*return*), risk (*volatility*), capital market monitoring (*leverage*), firm age, cash flow rights, and the wedge between control and dividend rights of the controlling shareholder. All regressions include time dummies and (2-digit ICB code) industry fixed effects. Standard errors are clustered at firm level.

Estimation results are reported in table 3.4. CEOs in FC firms get paid significantly more than their colleagues in non FC firms. Pay differential is 21 percent in salary and 42 percent in overall earnings. That is, the median CEO would earn an extra million kronor when moving from a non–FC firm to an FC firm. Option grants are used more frequently, and performance sensitivity of options is also higher in FC firms than in non–FC firms (columns (4) and (6)). Overall, FC firms exhibit stronger performance-based incentive schemes (column (5)). In table 3.6, panel A, I report partial effects of foundation control in probit, fractional logit and Tobit estimations, evaluated at medians of the continuous independent variables included in the regressions. For the median firm in the sample, foundation control would increase the probability of option grants by 28 percent, and variable compensation by 9 percent. Given that CEOs hold stock options, for an increase of a million kronor in the median firm's value, the change in CEO option value is larger in FC firms than non–FC firms by SEK2,600.

The results for control variables are consistent with the literature. Firm size has a large and positive impact on executive pay (Baker, Jensen, and Murphy, 1988; Jensen and

Murphy, 1990; Girma, Thompson, and Wright, 2007; Gabaix and Landier, 2008). Compensation is responsive to stock performance (Murphy, 1985; Mehran, 1995). Regarding ownership structure, there is no evidence that control in excess of cash flow rights leads to higher pay. This is in line with a common view that the cost of concentrated ownership in Swedish public firms is modest.[8] The monitoring effect of ownership concentration seems to prevail as cash flow rights of the controlling shareholder are negatively related to CEO remuneration (Adams and Giannetti, 2012).

The estimation results for the baseline specifications suggest larger compensation and stronger performance pay in FC firms compared to non–FC firms. Next, I address some arrangements that may alleviate the use of incentive contracts. As seen in table 3.3, managerial ownership is much higher in non FC than in FC firms. Since insider holdings help to align manager interest, they could justify the observed differences in executive pay between the two firm groups. Similarly, if a CEO is from the controlling family, it is more likely that he shares the family interest, and hence strong incentives are superfluous. Family CEOs represent 23 percent of the non–FC subsample, but are negligible among FC firms. Finally, large blockholders other than the controlling shareholder can also exercise their governance role. In FC firms, they may replace the foundations in monitoring. I find that 38 percent of FC firms, and 48 percent of non–FC firms have at least another large shareholder with substantial control, i.e., at least 10 percent of the votes. Supplementary monitoring from minority blockholders may explain the lower use of incentive contracts in non–FC firms. Therefore, I add to the baseline model (3.7) the following control variables: managerial owernship, family CEO indicator, and other block indicator. Estimation results for the full model are reported in table 3.5. Marginal effects in specifications (4)–(6) of table 3.5 are presented in table 3.6, panel B.

[8]Control premium in Sweden is relatively low compared to other countries (Dyck and Zingales, 2004).

Total compensation and incentive pay are significantly higher in FC firms, consistent with the model prediction in section 3.2. Bonus is equally competitive, and the difference in salary between the two firm types is marginally significant. Thus, the gap in total pay and incentive schemes are driven by the greater use of options in FC firms.

3.4.2 Shareholder returns and foundation control

This section provides a comparative analysis of shareholder return between FC and non–FC firms. As proposed by the model in section 3.2, the more pronounced use of incentive contracts by FC firms implies that monitoring is indeed less costly than incentive contracts for some non–FC firms. This suggests a negative relationship between foundation control and shareholder expected payoff. I use ROA and ROE to proxy for shareholder return on invested capital (Anderson and Reeb, 2003). I estimate the relationship between foundation control and these profitability measures, controlling for important firms characteristics such as size, risk, governance structure and industry (Anderson and Reeb, 2003). Using fixed effects is infeasible due to the time persistency of foundation control, hence I use OLS and random effects. The results are reported in table 3.7. Foundation control is negatively related to shareholder return, but at most marginally significant.

3.4.3 Robustness check

In table 3.8, I check whether the relationship between foundation control and executive is robust to variations in model specifications and variable proxies. I use *adjusted compensation*, a measure of industry–relative compensation, in place of log total compensation (columns (1)–(4)), and use random effect estimation instead of pooled OLS (column (3)). I proxy for firm size by log market capitalisation (columns (2) and (5)), use firm-specific returns and idiosyncratic volatility (column(2)), allow for nonlinear effects of firm age (columns (2)–(6)), and control for CEO age and tenure (column (4)). The results show that

the estimates for foundation control are consistently positive across specifications.

3.5 Conclusion

I examine the link between foundation control and executive compensation, using a sample of 193 Swedish listed family firm during the period of 2001–2009. After controlling for differences in firm characteristics, ownership structure, governance and industry effects, I find that foundation control is significantly and positively related to executive compensation, both in level and the importance of performance–based incentive schemes. The difference in total earnings and performance pay are attributed to the more pronounced use of option grants in FC firms. The results are robust to various effects including managerial ownership, family connection, and outside monitoring provided by other blockholders. I show that the greater use of incentive contracts in FC firms is in line with the optimal contracting, since the absence of cash flow rights limits foundation choices of disciplining mechanisms, compared to regular stockholders. The empirical findings support the hypothesis that managerial compensation works as a substitute for shareholder monitoring.

Since managerial ability is omitted from the analysis, one could argue CEOs in FC firms earn more because they are more talented. First, it is not evident that foundations systematically employ better CEOs. Second, I check how foundation control is related to firm performance, and find that market–adjusted return is not higher in FC firms than non–FC firms, after controlling for important firm characteristics including size, risk and governance (unreported results). Therefore, CEO talent does not well explain the difference in pay practices between FC and non–FC firms.

The interdependence of multiple governance mechanisms makes it challenging to estimate the effect on firm performance of one particular instrument (Agrawal and Knoe-

ber, 1996). Foundation control presents a unique setting in which firms are immune to common disciplining devices such as large shareholder monitoring and takeover threat. In addition, existing work on FC firms does not advocate several alternative mechanisms including boards of directors and pressure from the managerial labor market (Hansmann and Thomsen, 2011). This paper suggests that FC firms use incentive contracts to substitute for inadequate monitoring. Hence, examining the pay performance relationship in FC firms could add evidence on the effectiveness of incentive contracts as a governance mechanism.

Appendix A. The Wallenberg Foundations

Wallenberg Foundations refer to the charitable foundations set up by members of the Wallenberg family. There are currently 10 of them. The three largest foundations, Knut and Alice Wallenberg, Marianne and Marcus Wallenberg, and Marcus and Amalia Wallenberg, are among the largest research funders. The Foundations have contributed more than SEK 4.5 billion (USD 588.6 million) to Swedish scientific research and education in the last five years.[9]

The Knut and Alice Wallenberg Foundation

The Foundation was established in 1917 by K.A. Wallenberg and his wife Alice with an initial endowment of SEK 20 million. They gradually transferred the major part of their accumulated assets and continued to develop the Foundation over the following three decades. The purpose of the Foundation is to promote scientific research, teaching and education that are beneficial to Sweden.

The Foundation assets are directly or indirectly invested in listed shares in Swedish industry. The Foundation investment policy states that its assets shall be placed as long-term investments at low risk. In addition, the assets shall yield long-term stable returns to secure resources for the distribution of grants.

The Foundation daily activities are managed by the Executive Director. The Board of Directors has the ultimate responsibility for the Foundation.

[9] Based on Riksbank 2009 average annual exchange rate.

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Table 3.1: Variable description and sources

Variable	Description
Total compensation	Sum of salary, bonus and value of option grant, measured in SEK. Salary, bonus and information on option grants are obtained from annual reports. Option value is estimated with the Black-Schole formula for a European call option on a dividend paying stock.
Option	Equals one if the CEO holds options at the end of the year, and zero otherwise.
Option sensitivity	$\Delta \frac{\text{Shares in option award}}{\text{Shares outstanding}} \text{SEK } 1,000$ Δ is the Black-Scholes hedge ratio.
Variable compensation	Ratio of bonus and value of option grants to total compensation.
Adjusted compensation	Natural logarithm of the ratio of total compensation to industry compensation. Industry compensation is the median compensation, computed for each year and industry. Industries are classified into 9 broad fields, including (i) agriculture, forestry and fishing; (ii) mining; (iii) constructions; (iv) manufacturing; (v) transportation, public utilities; (vi) wholesale trade; (vii) retail trade; (viii) finance, insurance, real estate; and (ix) services.
Foundation	Equals one if the firm controlling shareholder is a foundation or a group of foundations, zero otherwise.
Voting right	Percentage of votes by the largest shareholder
Cash flow right	Percentage of cash flow right of the largest shareholder
Wedge	Difference between voting right and cash flow right of the largest shareholder
Family CEO	Equals one if the CEO is from the controling family, zero otherwise.
Family management	Equals one if either the CEO or the Chairman of the board is from the controlling family.

Continued on next page...

... table 3.1 continued

Variable	Description
Managerial ownership	Ratio of number of shares held by CEO to total number of shares. CEO shareholdings are from annual reports. Total number of shares is the sum of all issued shares of all types (A, B, C), obtained from SIS Ägarservice AB.
Market cap	Market price at year end * Common shares outstanding. Source: Datastream (code WC08001).
Asset	Total assets. Source: Datastream (code WC02999).
Return	Annualized stock return, computed as: $\sum_{12}^{t=1} ln(RI_t/RI_{t-1})$ (3.8) Where RI is either the firm's monthly return index (code RI), obtained from Datastream .
Adjusted return	Market adjusted return, measured as the difference between the individual firm annualized return and the market annualized return.
Volatility	Annualized standard deviation of the firm monthly stock returns.
Idiosyncratic volatility	Annualized standard deviation of the residuals from the firm stock returns after netting the market returns.
Q	Aggregate of debt and the market value of equity divided by aggregate of debt and the book value of equity.
ROA	Net income divided by total assets.
ROE	Net income divided by book value of equity.
Leverage	Ratio of debt to equity. Debt is the sum of long and short term debt, where debt refers to all interest bearing and capitalized leased obligations. Source: Datastream (code WC03255)
Industry types	Constructed based on the first 2 digits of the Industry Classification Benchmark (ICB) obtained from Datastream.

Data sources: Information on CEO salary, bonus, options, CEO age and tenure are hand-collected from annual reports. Data on shareholdings are obtained from the series of "Owners and Power in Sweden's listed Companies" by Fristedt and Sundqvist (2002–2009), and annual reports. Financial data, industry code, and stock prices are obtained from DataStream

Table 3.2: Foundation control and firm characteristics across industries

Industry	Foundation	Assets	Market cap	Total compensation	ROA	Leverage	Return	Volatility
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mining	0.000	7.460	12.900	14.600	0.047	0.287	0.105	0.440
Construction	0.563	9.880	3.930	4.750	0.050	0.555	0.088	0.297
Manufacturing	0.108	1.060	0.836	2.610	0.047	0.443	0.067	0.377
Transportation, public utilities	0.020	5.330	2.080	5.240	0.030	0.533	0.119	0.450
Wholesale trade	0.000	1.270	1.260	2.700	0.081	0.247	0.146	0.309
Retail trade	0.000	2.920	4.160	4.740	0.096	0.146	0.144	0.342
Finance, insurance, real estate	0.123	4.840	2.180	2.400	0.034	0.582	0.157	0.326
Services	0.046	0.394	0.511	2.190	0.033	0.089	-0.023	0.472
Full sample	0.092	1.120	0.990	2.570	0.044	0.345	0.077	0.387

Column (1) reports the proportion of FC firms in each industry. Columns (2)–(8) present firm characteristics (median) across industries. Assets, market capitalization and total compensation are expressed in SEK million. All variables are described in table 3.1.

Table 3.3: Descriptive statistics

Variable	Total		Non-FC		FC		Difference	
	Mean	Median	Mean	Median	Mean	Median	t-test	Ranksum test
Panel A. Executive Compensation								
Total Compensation (SEKmm)[a]	4.997	2.559	4.491	2.402	9.995	8.648	-11.612^{***}	-10.370^{***}
Salary (SEKmm)[a]	2.750	2.036	2.501	1.937	5.222	5.666	-11.163^{***}	-10.340^{***}
Bonus (SEKmm)[a]	0.703	0.000	0.607	0.000	1.663	0.890	-6.304^{***}	-7.515^{***}
Variable compensation	0.218	0.143	0.203	0.113	0.366	0.337	-7.319^{***}	-7.612^{***}
Option sensitivity	2.203	0.000	2.260	0.000	1.643	0.277	1.792^{*}	-4.633^{***}
Panel B. Ownership Structure								
Voting right (%)	40.254	35.900	40.776	36.000	35.040	32.000	4.076^{***}	1.869^{*}
Cash flow right (%)	27.756	24.400	28.355	25.600	21.777	21.700	6.996^{***}	3.059^{***}
Wedge (%)	12.506	9.900	12.430	9.800	13.263	13.000	-0.733	-1.288
Managerial Ownership (%)	5.551	0.245	6.108	0.349	0.381	0.014	12.339^{***}	9.495^{***}
Panel C. Firm Characteristics								
Market cap (SEKmm)[a]	7.977	0.993	5.460	0.847	33.010	15.241	-12.608^{***}	-11.084^{***}
Asset (SEKmm)[a]	20.520	1.125	4.740	0.969	178.328	31.325	-11.924^{***}	-11.033^{***}
Return	-0.004	0.071	-0.006	0.070	0.016	0.120	-0.477	-0.187^{***}
Tobin's Q	1.540	1.053	1.575	1.072	1.192	0.842	3.603^{***}	3.463^{***}
ROA	0.002	0.044	-0.001	0.045	0.037	0.042	-3.335^{***}	-0.307
ROE	-0.066	0.105	-0.082	0.102	0.092	0.127	-4.142^{***}	-1.592
Volatility	0.448	0.387	0.455	0.394	0.373	0.334	4.974^{***}	4.066^{***}
Leverage	0.724	0.347	0.658	0.312	1.382	0.440	-2.478^{**}	-2.666^{***}
Firm age	35	22	33	21	63	71	-10.306^{***}	-9.741^{***}
Panel D. CEO characteristics								
Age	49	49	49	49	50	50	-1.231	-1.095
Tenure	7	4	7	5	4	3	4.854^{***}	4.104^{***}

This table presents descriptive statistics for relevant variables. The sample is split by whether or not the firm is controlled by foundations. I test for differences in means with the t-test and differences in medians with the Wilcoxon Rank-sum test; test statistics and significance levels are reported. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively. All variables are defined in table 3.1.
[a] Mean differences are tested on the natural logarithm of these variables.

Table 3.4: Executive compensation and foundation control: baseline model

	Dependent Variables					
	Total Compensation	Salary	Bonus	Option	Variable compensation	Option sensitivity
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
Foundation	0.354***	0.189**	1.010	0.743**	0.587**	6.981**
	(0.134)	(0.095)	(1.001)	(0.344)	(0.270)	(2.985)
Ln asset	0.337***	0.291***	1.014***	0.062	0.201***	−1.385**
	(0.030)	(0.021)	(0.217)	(0.060)	(0.056)	(0.557)
Cash flow right	−0.011***	−0.009***	−0.074***	−0.012**	−0.011**	−0.025
	(0.003)	(0.002)	(0.019)	(0.005)	(0.005)	(0.041)
Wedge	0.002	0.002	0.008	0.005	0.000	0.154*
	(0.004)	(0.003)	(0.027)	(0.007)	(0.007)	(0.087)
Q	0.045***	0.049***	0.021	−0.011	0.032	−0.461
	(0.015)	(0.016)	(0.189)	(0.049)	(0.032)	(0.383)
Return	0.109**	−0.152	2.048***	−0.051	0.656***	
	(0.044)	(0.095)	(0.406)	(0.113)	(0.114)	
Volatility	0.721***	0.086	0.095	0.102	0.996***	
	(0.181)	(0.288)	(1.436)	(0.430)	(0.366)	
Leverage	−0.058**	−0.064***	−0.346*	0.078	−0.010	0.390
	(0.022)	(0.016)	(0.188)	(0.054)	(0.045)	(0.458)
Firm Age	−0.004	−0.002	0.008	−0.000	−0.004	−0.060*
	(0.002)	(0.002)	(0.015)	(0.004)	(0.004)	(0.033)
Constant	10.262***	10.929***	−5.294	−0.746	−5.030***	19.636**
	(0.504)	(0.342)	(3.662)	(0.928)	(0.885)	(8.353)
Observations	1,205	1,211	1,212	754	1,173	785
R-squared	0.541	0.420	0.323			

The table presents the estimation results for the baseline specification. The dependent variables are different measures of CEO's compensation. Total compensation, salary and bonus are in logarithm form. Variable compensation is the proportion of bonus and options in total compensation. Option sensitivity is measured as the change in CEO's option value with respect to a SEK1,000 change in shareholder wealth. Foundation equals 1 for FC firms, and 0 otherwise. Control variables are defined in table 3.1. All regressions include time and industry fixed effects. Parameters in specifications (1)–(3) are estimated using OLS. Parameters in specifications (4)–(6) are estimated using probit, quasi-likelihood, and Tobit, accordingly. Standard errors (in parentheses) are clustered at firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Table 3.5: Executive compensation and foundation control: full model

	Dependent Variables					
	Total Compensation	Salary	Bonus	Option	Variable compensation	Option sensitivity
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
Foundation	0.281**	0.171*	0.635	0.792**	0.538**	7.174**
	(0.129)	(0.100)	(1.040)	(0.339)	(0.259)	(2.937)
Managerial ownership	−0.006*	−0.008*	−0.055**	−0.020*	−0.026**	−0.088
	(0.003)	(0.005)	(0.027)	(0.011)	(0.013)	(0.124)
Family CEO	−0.355***	−0.147	−1.477	−0.286	−0.432*	−2.444
	(0.108)	(0.094)	(0.931)	(0.261)	(0.242)	(3.193)
Other block	−0.096	0.016	−0.284	−0.184	−0.159	−1.273
	(0.061)	(0.065)	(0.568)	(0.171)	(0.139)	(1.370)
Ln asset	0.324***	0.279***	0.917***	0.016	0.160***	−1.589***
	(0.030)	(0.022)	(0.221)	(0.058)	(0.058)	(0.547)
Cash flow right	−0.009***	−0.006***	−0.057***	−0.010*	−0.009*	−0.022
	(0.003)	(0.002)	(0.022)	(0.006)	(0.005)	(0.044)
Wedge	0.006*	0.006*	0.026	0.009	0.006	0.174*
	(0.003)	(0.003)	(0.027)	(0.008)	(0.008)	(0.093)
Q	0.052***	0.054***	0.117	−0.005	0.052*	−0.424
	(0.015)	(0.018)	(0.210)	(0.049)	(0.029)	(0.367)
Return	0.125***	−0.151	2.036***	−0.014	0.630***	
	(0.044)	(0.108)	(0.429)	(0.113)	(0.112)	
Volatility	0.750***	0.115	0.358	0.041	0.909**	
	(0.183)	(0.326)	(1.521)	(0.443)	(0.359)	
Leverage	−0.048**	−0.055***	−0.242	0.105**	0.004	0.429
	(0.019)	(0.017)	(0.170)	(0.047)	(0.041)	(0.474)
Firm Age	−0.005**	−0.003**	0.003	−0.003	−0.007*	−0.071**
	(0.002)	(0.001)	(0.015)	(0.004)	(0.004)	(0.035)
Constant	9.057***	9.851***	−3.751	0.027	−3.747***	23.671***
	(0.410)	(0.420)	(3.735)	(0.900)	(0.900)	(8.394)
Observations	1,035	1,039	1,040	749	1,007	780
R-squared	0.583	0.415	0.362			

The table presents the estimation results of the relationship between foundation control and executive compensation. The dependent variables are different measures of CEO's compensation. Total compensation, salary and bonus are in logarithm form. Variable compensation is the proportion of bonus and options in total compensation. Option sensitivity is measured as the change in CEO's option value with respect to a SEK1,000 change in shareholder wealth. Foundation equals 1 for FC firms, and 0 otherwise. Control variables are defined in table 3.1. All regressions include time and industry fixed effects. Parameters in specifications (1)–(3) are estimated using OLS. Parameters in specifications (4)–(6) are estimated using probit, quasi-likelihood, and Tobit, accordingly. Standard errors (in parentheses) are clustered at firm level. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Table 3.6: Marginal effects

Independent Variables	Dependent Variables: Option		Variable compensation		Option sensitivity	
	Coef.	M.e.	Coef.	M.e.	Coef.	M.e.
Panel A. Baseline specification (table 3.4)						
Foundation	0.743**	0.277**	0.587**	0.091**	6.981**	2.589**
	(0.344)	(0.108)	(0.270)	(0.041)	(2.985)	(1.085)
Panel B. Full specification (table 3.5)						
Foundation	0.792**	0.275***	0.538**	0.086**	7.174**	2.669**
	(0.339)	(0.096)	(0.259)	(0.04)	(2.937)	(1.074)
Managerial ownership	−0.020*	−0.008*	−0.026**	0.004**	−0.026**	−0.033
	(0.011)	(0.004)	(0.013)	(0.002)	(0.124)	(0.046)
Family CEO	−0.286	−0.114	−0.432*	−0.069*	−2.444	−0.909
	(0.261)	(0.102)	(0.039)	(0.242)	(3.193)	(1.192)
Other block	−0.184	−0.073	−0.159	−0.026	−1.273	−0.474
	(0.171)	(0.068)	(0.139)	(0.022)	(1.370)	(0.504)

The table reports the estimates and marginal effects in probit, quasi-likelihood, and Tobit regressions (columns (4)–(6)) in table 3.4 and 3.5. Marginal effects are evaluated at medians of the continuous variables included in the regressions. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Table 3.7: Shareholder returns and foundation control

	Dependent Variables					
	ROA			ROE		
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
Foundation	−0.035*	−0.044*	−0.083	−0.104	−0.142	−0.276
	(0.020)	(0.023)	(0.052)	(0.117)	(0.124)	(0.176)
Ln market cap	0.019***	0.022***		0.095***	0.103***	
	(0.005)	(0.006)		(0.034)	(0.040)	
Ln asset			0.044***			0.159***
			(0.009)			(0.032)
Managerial ownership		0.001	0.001		0.001	0.002
		(0.001)	(0.001)		(0.005)	(0.003)
Family management		−0.013	−0.031*		−0.031	−0.070
		(0.018)	(0.019)		(0.108)	(0.089)
Other block		0.001	−0.002		0.117	0.135
		(0.015)	(0.019)		(0.087)	(0.086)
Wedge		−0.001	−0.003***		−0.003	−0.005
		(0.001)	(0.001)		(0.004)	(0.004)
Cash flow right		0.001	−0.000		0.001	0.001
		(0.000)	(0.001)		(0.003)	(0.003)
Volatility	−0.668***	−0.628***	−0.611***	−2.602***	−2.397***	−2.262***
	(0.131)	(0.138)	(0.043)	(0.734)	(0.800)	(0.232)
Leverage	−0.009**	−0.009**	−0.018***	−0.078	−0.060	−0.118***
	(0.004)	(0.004)	(0.007)	(0.065)	(0.067)	(0.031)
Ln firm age	−0.006	0.002	−0.002	−0.060	−0.028	−0.045
	(0.010)	(0.011)	(0.019)	(0.042)	(0.044)	(0.062)
Constant	0.080	0.212*	−0.254*	0.234	0.135	−0.969*
	(0.118)	(0.126)	(0.142)	(0.639)	(0.676)	(0.548)
Observations	1,200	1,024	1,024	1,200	1,024	1,024
R-squared	0.362	0.364		0.228	0.207	

The dependent variable is ROA in specifications (1)–(3), and ROE in specifications (4)–(6). All variables are defined in table 3.1. All regressions include time and industry fixed effects. Parameters in specifications (1)–(2) and (4)–(5) are estimated using OLS with firm clustered standard errors. Parameters in specifications (3) and (6) are estimated using random effects. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Table 3.8: Executive compensation and foundation control across specifications

	Dependent Variables					
	Adjusted compensation				Option	Option sensitivity
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
Foundation	0.338**	0.324**	0.316**	0.299**	0.704**	7.530**
	(0.130)	(0.133)	(0.150)	(0.141)	(0.335)	(3.213)
Ln asset	0.306***		0.230***	0.301***		−1.662***
	(0.029)		(0.027)	(0.032)		(0.629)
Ln market cap		0.321***			0.054	
		(0.026)			(0.056)	
Return	0.122**		0.190***	0.122**	−0.041	
	(0.048)		(0.040)	(0.053)	(0.114)	
Adjusted return		0.063				
		(0.048)				
Volatility	0.682***		0.404***	0.721***	0.143	
	(0.178)		(0.123)	(0.189)	(0.444)	
Idiosyncratic volatility		0.751***				
		(0.210)				
Firm age	−0.005**					
	(0.002)					
Ln firm age		−0.159***	−0.116**	−0.148**	−0.112	−1.906
		(0.057)	(0.058)	(0.063)	(0.128)	(1.197)
CEO age				−0.006		−0.057
				(0.005)		(0.119)
CEO tenure				0.005		−0.051
				(0.005)		(0.096)
Observations	1,035	1,035	1,036	956	749	734
R-squared	0.529	0.533		0.521		

The table presents the relationship between foundation control and executive compensation across different specifications. The dependent variable is industry-adjusted compensation in specifications (1)–(4), option in (5), and option sensitivity in (6). Unreported controls include managerial ownership, family CEO, other block, cash flow rights, wedge, Q and leverage. All variables are defined in table 3.1. All regressions include time and industry fixed effects. Parameters in specifications (1), (2) and (4) are estimated using OLS. Parameters in specifications (3), (5) and (6) are estimated using random effects, probit, and Tobit, respectively. Standard errors (in parentheses) are clustered at firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

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