The Impact of Country-level Characteristics on Cross-Border Merger and Acquisition Premiums

A Thesis Submitted to the College of

Graduate Studies and Research

in Partial Fulfillment of the Requirements

for the Degree of Masters of Science in Finance

in the Department of Finance and Management Science

Edwards School of Business

University of Saskatchewan

Saskatoon, Saskatchewan, Canada

by

Myles Shedden

Permission of Use

In presenting this thesis in partial fulfillment of the requirements for a Postgraduate degree from the University of Saskatchewan, I agree that the Libraries of this University may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by the professor or professors who supervised my thesis work or, in their absence by the Head of the Department of the Dean of the College in which my thesis work was done. It is understood that any copying, publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of Saskatchewan in any scholarly use which may be made of any material in my thesis.

Requests for permission to copy or to make other use of material in this thesis in whole or in part should be addressed to:

Head of the Department of Finance and Management Studies

Edwards School of Business

University of Saskatchewan

25 Campus Drive

Saskatoon, Saskatchewan

S7N 5A7

Abstract

It is observed that merger premiums vary across countries. In this paper we study the impact of country-level characteristics on cross-border merger and acquisition premiums. By using principal component analysis to combine several existing country-level indices, we provide empirical evidence that stronger measures of legal and regulatory standards, investor protection, and corporate transparency lead to higher merger premiums in cross-border transactions. The results indicate that managers of the acquiring firm are willing to pay a higher premium to acquire a foreign target when they believe the risks of achieving merger synergies are lower, and that the market for corporate control is not an effective substitute for a formal legal and regulatory system that protects shareholders.

Keywords: Cross-border M&A; Country-level Characteristics; Premiums; Corporate Valuation, Corporate Governance

JEL Classification: G28; G30; G32; G34;

Acknowledgements

Unequivocally this work would not have been possible without the tremendous support and guidance from my co-supervisors, Dr. Min Maung and Dr. Craig Wilson – your patience, encouragement and knowledge cannot be overstated – to you I am very indebted.

I would also like to acknowledge and thank Dr. Marie Racine and Dr. Abdullah Mamun, who graciously welcomed me to the program and provided much needed encouragement along the way.

Next, I would like to sincerely thank my grandma, my parents and my sister, my friends and my former colleague and good friend Mike Wynes.

Finally, I'd like to thank Chantel Brust for her continued love and support, and the team at TriWest for encouraging me to pursue my goals.

Table of Contents

List of Tables

List of Figures

1. Introduction

Our world becomes increasingly interconnected through the globalization of information, trade, and capital markets. One result of the growing interconnectedness is the ability, willingness, and even desire for companies to pursue inorganic growth strategies in foreign markets. This observation is not new, and several scholars theorize how and why this occurs. The explanations range from behavioral theories whereby management recognizes market mispricing to neoclassical explanations in which industry shocks drive merger waves (Nelson, 1959; Gort, 1969; Mitchell and Mulherin, 1996; Shleifer and Vishny, 2003; Rhodes-Kropf and Vishwanathan, 2004; Harford, 2005). Despite the range of possible explanations, the data suggests that cross-border mergers and acquisitions (M&A) occur frequently and are even becoming an increasingly important component of global capital markets and finance. Figure 1 illustrates the recent waves of M&A activity, both domestic and cross-border, that occur over time. Based on this data, cross-border transactions are increasing as both a percentage of the total number of deals, as well as the total value of transactions. As a result of this increasingly important role for cross-border M&A in the global market place, we provide additional insights into the effect of country-level characteristics on corporate valuation, and on cross-border M&A premiums, specifically.

[Insert Figure 1: Historical Domestic and Cross-border M&A]

Despite the voluminous work on the drivers of cross-border M&A and foreign direct investment (FDI), comparatively less literature has investigated cross-border M&A premiums. We view this gap in the literature as an opportunity to study the clear differences in merger premiums across countries. Merger premiums are, and have been, heavily scrutinized by shareholders, academics, financial pundits and other stakeholders. Premiums have come under scrutiny because shareholders from both the acquirer and the target want management to act in the best interests of the respective shareholders.[1] Naturally, target shareholders want to maximize the premium, whereas acquirer shareholders want to minimize it. The decision by management to undertake M&A can have meaningful implications for shareholders, and while the popularity

[1] See Jensen and Meckling (1986)

for inorganic growth has increased over time, there remains healthy skepticism that M&A creates lasting shareholder value in many cases. By definition, cross-border M&A involves additional complexity relative to domestic M&A due to considerable differences across countries. The notable variation in legal, regulatory, and governance characteristics as well as merger premiums across countries allows us to investigate whether variation in country-level characteristics, particularly those related to the investment environment, explain the variation we observe in cross-border M&A premiums. We indeed find that stronger target country-level legal and regulatory standards as well as improved corporate governance leads to higher merger premiums.

Much of the relevant literature that provides the foundation for this study is owed, at least in part, to the thoughtful works of La Porta, Lopez-de-Silanes, Shleifer and Vishny. These authors published several works in the 1990s and 2000s studying the effects of country-level legal and regulatory standards and their impact on corporate governance, valuation, and the broader capital markets. The key country-level variables include differences in legal origins (La Porta et al., 1998), rule of law (La Porta et al., 1997; La Porta et al., 1998), judicial efficiency (La Porta et al., 1997; La Porta et al., 1998; La Porta et al., 2000a; La Porta et al., 2000b; La Porta et al., 2002), ownership concentration (La Porta et al., 1998), and investor protection (La Porta et al., 2002). And yet, despite this proliferation of "law and finance" literature, no study has yet to investigate how these issues relate to cross-border M&A premiums.[2] Additionally, one issue that many researchers in this area encounter is the highly correlated nature of many country-level variables. The high correlation among these variables is due, in large part, to the endogenous environment in which they develop (within an individual country). To remedy the issue of endogeneity, La Porta et al. (1998) propose the use of a country's legal origins, as a proxy for the strength of a country's legal and regulatory system and investor protection standards. The authors go on to use legal origins to explain growth and development of a country's capital markets. The legal origin of a country is largely exogenous to other variables and represents many legal and regulatory characteristics that both foreign and domestic investors are concerned about. This methodology is theoretically sound, however there remain many other institutional characteristics that impact investor decision making as well. As a result of the endogenous and

[2] It is important here to note that the indices used by La Porta et al. have been developed by both the authors and various other sources. These indices are used as proxies for institutional standards and are by definition not objective measures

highly correlated nature of many other country-level variables, an empirical result indicating that better legal enforcement is correlated with higher stock market valuations may in fact be capturing the impact of better accounting standards, or less risk of forced government expropriation, etc. We propose a new measure of a country's investment environment to deal with the strong correlation between country-level variables, while still addressing the risk-related concerns of investors. We thereby postulate a positive relation between the target's investment environment index and the premium paid in cross-border M&A deals.

For illustrative purposes, the question we explore can be understood by the following example: Suppose a UK company (Company A) is looking to acquire one of two target companies, Company B (located in Canada), or Company C (located in France). The acquirer would expect the current market value of each company to accurately reflect the underlying country-level environment in which each company is domiciled.[3] Assuming that both businesses are virtually identical with the exception of where they are located, the acquirer would then turn their attention to the potential synergies that could result from combining their business, with either Company B or Company C. Assume the concept of synergies is not relevant to the acquirer until after they consider the transaction. Prior to announcement of a transaction, the target company's share price will not reflect the full value of a transaction premium due to the uncertainty that a transaction will occur. Once a merger announcement is made however, the target's share price should quickly reflect the new expected value of the firm, which in turn should reflect at least a fraction of the expected value of the synergies to be achieved. Assuming again that Company B and Company C are identical apart from their geographic locations, the difference in value attributable to potential synergies that would be achieved by acquiring either of the targets should be at least partially explained by the differences in each target's country-level characteristics. To explain this another way, the premium that the acquiring firm pays to target shareholders should be at least partially explained by the level confidence that management has in their ability to achieve the anticipated synergies. Management's level of confidence then, should be driven, at least in part, by their perception of the underlying risks associated with the target country. We contend that when target countries have stronger legal, regulatory and corporate governance functions, management of the acquiring firm are more

[3] As per Fama's (1970) Efficient Market Hypothesis

likely to feel as if their rights are systematically protected and there is less risk in making an investment. As a result, the acquiring firm's management will discount the expected cash flows of the target at a lower rate and therefore be willing to pay a higher premium. This argument is an extension of the argument put forth by La Porta et al. (2002) and Bhattacharya and Daouk (2002) whereby better investor protection leads to a lower cost of capital as investors are more willing to part with their capital. This argument is supported by Lombardo and Pagano (2000), who find evidence that legal standards and judicial efficiency are positively associated with the risk-adjusted return on equity – or rather, there is a premium associated with better institutions. It is further supported by the findings of Demirguc-Kunt and Maksimovic (1998), who show that firms in countries with better functioning institutions have superior cost of capital and valuations.

The motivation of this paper is twofold. First, several studies recognize and explore differences in legal and regulatory standards across countries. We want to add a new perspective on how country-level investment characteristics affect corporate valuation in cross-border M&A by studying their relation to merger premiums. Merger premiums also vary by country, and we expect that some of that variation is explained by country-level investment characteristics. Second, we want to address the common issue of collinearity that is associated with country-level investment variables and, in doing so, propose a new proxy measure of legal and regulatory standards, corporate governance, and transparency. To address the issue of collinearity we use principal component analysis to create a new index to represent the target country's investment environment that combines several theoretically and empirically robust proxies for legal, regulatory and investor protection characteristics. Using a sample of 1,864 cross-border M&A transactions we analyze the relation between the target country's investment environment index and the premium paid in cross-border transactions. We argue that when there is less perceived risk associated with targets, acquirers are willing to pay a higher premium, and we find that the premium is higher for targets in countries with a better investment environment. We also find evidence that acquirers are willing to pay more to acquire greater control of foreign assets and that larger deals, as measured by a target's total assets, are associated with lower premiums. Our findings provide another compelling argument for improved legal and regulatory standards, corporate governance, and corporate transparency.

The rest of the paper is organized as follows: Section 2, the literature review, will provide a review of the existing literature and provide a conceptual framework from which to better understand the study. Section 3 describes the data that is used in the study as well as some of the benefits and limitations of using this data. Section 4 provides an overview of the unique methodology used in the study and further analyzes the benefits and limitations of the chosen methodology. Section 5 presents and discusses the empirical results and Section 6 summarizes and concludes the paper.

2. Literature Review and Hypothesis Development

The purpose of this section is twofold. The first is to introduce the existing relevant literature. The second is to provide a theoretical framework for the rationale of our investment environment index as well as the results and implications of the empirical work that follows.

2.1 Mergers & Acquisitions

We begin looking at some of the existing literature related to M&A. The neoclassical theory suggests that M&A broadly improves efficiency and provides productivity gains for acquirers by allowing them to achieve synergies related to acquisitions (Mitchell and Mulherin, 1996; Holmstrom and Kaplan, 2001; Jovanovic and Rousseau, 2002; Damodaran, 2005). Shleifer and Vishny (2003) suggest another theory, related to the neoclassical explanation, whereby M&A transactions are driven by the stock market valuations of the merging firms and where managerial behavior is a central feature. The concept of managerial behavior is a remarkably important component to understanding why managers pursue M&A and there are predominantly two ways to think about it. The first is that managers make good investment decisions that benefit shareholders. The second is that managers make bad investment decisions that do not reflect the best interests of shareholders (often times for personal gain). Jensen and Meckling (1976)'s agency theory complements the latter argument by suggesting that owner and manager interests diverge somewhat from those of other shareholders, such that they pursue personal utility-maximizing policies, sometimes at the expense of minority investors and other capital providers.

To address the issue of agency costs in more detail, an agency problem is created when a minority shareholder (principal) provides capital to management (agent) with the implicit understanding that the agent will act on the principal's behalf and with the principal's best interests in mind. Naturally, as Jensen and Meckling (1976) propose, management may be more inclined to award themselves perquisites or pursue non-value maximizing acquisitions that unfairly benefit themselves. This divergence of interests poses a major challenge to the "trust" element of the principal-agent relationship. Acting in their own personal interest can lead managers to pursue value-destroying acquisitions. For example, managers may seek to invest in a business that is most valuable under their leadership, thereby entrenching themselves in the firm (Jensen, 1986; Shleifer and Vishny, 1986; Morck et al., (1990). We refer to management entrenchment via the pursuit of value-destroying acquisitions as empire building. Shleifer and Vishny (1988, p. 13) states, "Acquisitions, especially friendly ones, may provide managers with their greatest opportunity for expressing their non-value-maximizing preferences." And so, to address the risk posed by managerial behavior and the agency relationship, firms have established corporate governance regimes that are designed to monitor management and protect shareholders from management who wish to pursue non-value maximizing acquisitions. These corporate governance systems are often established with the prevailing legal and regulatory standards in mind.

The M&A process is further complicated by the presence of information asymmetry between the managers of target and acquirer firms. That is, each manager is tasked with acting in their shareholders' best interests, and yet management from the target firm have access to much better information about their company's true worth than management from the acquiring firm. This presents the possibility of an adverse selection problem for the acquiring firm's management. As Akerlof (1970) puts it, the adverse selection problem arises out of the rational thinking that a manager may be purchasing a lemon.[4] We return to the concept of adverse selection and lemons later in the study; however, these two challenging issues, agency costs and information asymmetry, reduce the capital markets' ability to effectively allocate capital, assets, and ownership by allowing insiders to expropriate wealth from outside investors.

[4] Akerlof (1970) uses the illustrative example of the market for used cars to explain the problem of adverse selection.

Despite the challenges, M&A continues to remain a viable and heavily practiced growth strategy. According to Harford (2005) and Lipton (2006) M&A occurs in waves and each wave is can be defined by a concentration of the *type* of merger. For example, the early 1900s were associated with mergers for monopolistic power, this wave led to anti-monopolistic fears and eventually led to antitrust law in the US. The 1920s were associated with vertical mergers, paving the way for a new type of firm called conglomerates, this wave of transactions was unofficially ended by the great depression although appeared again in the 1960s. The 1980s were characterized by the breakup of many of these conglomerates by corporate raiders due to the inefficient nature of their multiple business verticals and lack of operational focus. The nature of this wave paved the way for the theory of the market corporate control (Jensen and Ruback, 1983; Scharfstein, 1988; Jensen, 1993). The 1990s saw another wave of mergers for scale, primarily driven by the deregulation of some markets (most notably the utilities industry) and the privatization of others (most notably the telecommunications industry).

2.2 Cross-border Mergers & Acquisitions

Commensurate with the rise of globalization and deregulation, cross-border M&A has become increasingly prevalent. The drivers and implications of cross-border M&A are largely similar to domestic M&A however cross-border deals, by definition, involve more variables, which leads to additional complexity, uncertainty, and the potential for substantially greater risks. According to Erel et al. (2012), "National borders add an extra element to the calculus of domestic mergers because they are associated with an additional set of frictions that can impede or facilitate mergers". Erel et al. (2012) also find that in a sample of 56,978 cross-border deals between 1990 and 2007, factors such as geography (proximity of the target and acquirer), currency movements, bilateral trade, and relative stock market valuations are associated with a greater likelihood of cross-border M&A.

At a more macroeconomic level, firms on aggregate are also subject to country-level mechanisms such as judicial efficiency, rule of law, securities regulations and accounting standards, which all seek to provide a framework within which the firms in an economy can operate effectively. Intuitively then, the extent to which these country-level mechanisms are successful is dependent upon the level by which they are enforced. La Porta et al. (1997) propose

that stronger laws (and their effective enforcement) protecting shareholders (and creditors) from expropriation by insiders leads to more efficient capital markets (capital allocation). Taking it one step further, many studies go on to suggest that the efficiency of the capital markets can play an important role in driving economic growth by funneling capital towards its most efficient use (Schumpeter, 1934; King and Levine, 1993; Beck et al., 2000). M&A is one channel by which capital markets aim to funnel capital towards its most efficient use by re-allocating management and ownership of assets and cash flows. Cross-border M&A then, is the natural progression of the search for growth in global capital markets.

As an extension to these prior findings, we expect countries that systematically facilitate stronger levels of corporate governance, legal and regulatory protection, and investor confidence to have firms that are more highly valued. Rossi and Volpin (2004) observe that acquirers tend to be from countries with better investor protection while targets are typically from countries with weaker investor protection. One explanation for this finding is that when investors have more rights and those rights are better protected, they are less likely to be expropriated by management and, consistent with La Porta et al., (2002) and Bhattacharya and Daouk (2002), this makes raising external equity to fund acquisitions less expensive (lower cost of capital).[5] Conversely, in countries with weaker investor protection, management is more likely to be entrenched, and as a result, the cost of capital is expected to be higher (Shleifer and Vishny, 1989). Bebchuk (1999) and Bebchuk and Cohen (2005) find that entrenchment in US firms (as measured by firms with staggered boards), is associated with meaningfully lower firm value (as measured by Tobin's Q). Bebchuk and Cohen (2005) also find that the relation between entrenchment and firm value is stronger when staggered boards are mandated in a firm's charter, which shareholders have no ability to amend versus when it is established in the firm's bylaws which can be easily amended. This would suggest that the underlying legal and regulatory environment in which a firm is governed, as well as the enforcement of those rules, affects the value an investor is willing to attribute to a firm. On an international scale, La Porta et al. (1999) find that in a sample of 371 large corporations in 27 wealthy countries, economies with weak investor protection tend to have high ownership concentration (usually by controlling families or the state) and controlling shareholders have power over the firm well in excess of their cash

[5] This same reasoning can be used with creditor protection; however, we focus exclusively on shareholder protection

flow rights (i.e. their pro-rata share of common equity). Additionally, Haidar (2009) finds that investor protection, as measured by the Anti-self-dealing index per Djankov et al. (2008), is useful in explaining cross-country differences in long-term economic growth and that the relations is stronger in lower-income countries where external capital is in higher demand.[6]

These findings have not been ignored as we continue to see regulators and decision-makers around the world rejigging their legal and regulatory policies to facilitate improved governance standards and investor protection. Despite the largely collective desire for these standards to improve globally, clear differences remain across countries.

One complication in assessing the impact of corporate governance and investor protection on firm value is that there is no clearly defined, ideal measure for either. There is, however, an understanding that when an investor purchases securities, they are purchasing specific rights. These rights may include the right to receive dividends, to vote for or against directors, to participate in new issues on the same terms as insiders, or the right to certain assets in the event a firm fails to make a contractual interest payment, etc. Historically, researchers have tried to create proxies for corporate governance and investor protection based on specific mechanisms that either enhance or detract from an investor's ability to exercise their contractual rights. These proxies have included indices such as the Accounting Standards Index, Legal Origin and Rule of Law Index, Anti-director Rights Index, and the Anti-self-dealing Index.[7,8]

In arguably one of the most recognized papers exploring cross-country variation and corporate finance, La Porta et al. (1998) find that when used as a proxy for investor protection, a country's legal origin can partially explain the level of financial development in a country.[9] One very attractive empirical feature of using legal origin as a proxy for investor protection is that it is truly exogenous to other variables, while also highly correlated with other related

[6] Haidar (2009) uses a measure provided by the World Bank called the Investor Protection Index (IPI) which is an updated measure of the Anti-self-dealing index proposed by Djankov et al. (2008)

[7] The Anti-self-dealing index is an index created by Djankov et al. (2008) that represents the legal protection of minority shareholders against expropriation by corporate insiders (developed in conjunction with Lex Mundi law firms); it is discussed in more detail in the Data section below

[8] The Anti-director rights is an index created by La Porta et al. (1998) that represents shareholders rights with respect to management; it is discussed in more detail in the Data section below

[9] The use of financial development here can take several meanings however recent literature has shown better legal protection of shareholders is associated with more developed markets (La Porta et al., 1997), lower ownership concentration (La Porta et al., 1999), higher dividend payouts (La Porta et al., 2000b), and higher corporate valuation (La Porta et al., 2002).

measures.[10] At a high level there are two families of law including: (1) common law (based on English law) and, (2) civil law, which is comprised of three sub-families including French, German and Scandinavian law.[11] In practice the two families are very different. Common law relies on precedent judicial decisions, or the doctrine of *stare decisis,* which is the principle of establishing litigious merit based on precedent decisions. These principles are typically guided by established legislation and statutes; however in their absence the system relies on natural reasoning, fairness and an innate sense of justice. In civil law however, only legislative enactments are considered to be legally binding and a person whose actions do not specifically breach these codes should not expect to receive an unfavorable ruling.

The distinction between these two legal families is important because investors have an inherent sense that in exchange for upfront capital they *will* receive cash flow rights or dividends (as well as voting rights in the case of common equity securities, or collateral rights in the case of debt securities). This inherent sense of understanding is merited only if the prevailing legal system will act appropriately, as the ultimate arbitrator, in the event that management does not honor the contract. As a result, investors are more willing to provide capital when they believe their rights are more strongly protected. La Porta et al. (1998) state that "since the protection investors receive determines their readiness to finance firms, corporate finance may critically turn on these legal rules and their enforcement".

A discussion on the effects of legal origins and investor protection on capital market development without addressing the enforcement of those laws would be incomplete. Although a country's legal framework is critical to facilitate investor confidence, the enforcement of such laws is also vitally important. In practice, there exists a trade-off, as noted by Hay (1994), whereby it is not theoretically obvious whether stricter laws or more flexible laws are more favorable to investors. Hay et al. (1996) suggests that if courts were able to consistently enforce contracts appropriately, then flexible and situational laws would likely be preferable; however, since enforcement is largely imperfect, clearly defined laws that provide little "gray area" may be preferable. This point of view regarding the importance of enforcement is shared by Stigler (1964) and Easterbrook and Fischel (1991).

[10] As discussed throughout this paper, other country-level variables are highly correlated and most often endogenous
[11] To some extent Chinese law combines civil law and socialist law as practiced in the People's Republic of China

Not coincidentally, La Porta et al. (1998) demonstrate that not only do legal rules vary across countries, but the level of enforcement of those laws varies as well. They find that country's based on German and Scandinavian law have the strongest levels of legal enforcement (however common law countries have strong enforcement as well), and French civil law countries have the weakest levels of enforcement. Similarly, the quality of legal enforcement is strongly correlated with a country's level of income, and even after controlling for per capita income, legal origin continues to be indicative of the level of legal enforcement. As one would expect, rule of law and legal enforcement are highly correlated, however cross-country variability still exists. From an investor standpoint, it is vital to consider both the law and its enforcement when assessing the legal and regulatory environment in which a company is domiciled. Starks and Wei (2013) propose that despite the high correlation between these variables, it is important to include both as they measure different institutional characteristics.

As discussed earlier, accounting standards are used as a measure of the disclosure requirements a company must provide to investors. For investors to make informed decisions about potential investments they require information related to the performance of the business. Once an investor has provided capital to an entrepreneur, they will seek to be routinely informed on the performance of their investment to ensure their capital is being used appropriately, and to benchmark their investments versus other potential investments. As a result of the agency relationship between management and shareholders, in the absence of adequate reporting standards, management may be free to use corporate funds in a way that is not in the best interest of the capital providers. Furthermore, an acquirer in pursuit of an M&A target will rely on historical financials and future projections to value the potential benefits of combining the two businesses. All else equal, when accounting standards are lower, information asymmetry is higher, and when accounting standards are higher, information asymmetry is lower. Interestingly, Rossi and Volpin (2004) and Erel et al. (2012) find that accounting standards are positively and significantly correlated with cross-border M&A volume. The study shows that a 12-point increase in accounting standards (the difference between accounting standards in Italy and Canada) correlates with a 5% increase in the volume of M&A. The authors find similar results, although not as significant, with investor protection. We interpret this association between accounting standards and M&A volume as increased disclosure and transparency

leading to reduced bid-ask spreads between buyers and sellers as well as lower information asymmetry.

2.3 Merger & Acquisition Premiums

The most traditional definition suggests that the premium to effectuate an M&A trade represents the benefit of having control of the target's assets and the synergies that can be realized by the resulting efficiency gains created by combining the two firms that would otherwise not be available (Jensen, 1986; Grossman and Hart, 1986; Bradley et al., 1988; Black, 1989). There remains considerable debate around whether takeovers actually produce real efficiency gains, with various studies finding both supportive and unsupportive arguments. For example, in a sample of 233 M&A trades, Meeks (1977) finds the return on assets (ROA) for acquiring firms in the UK declines consistently in post-merger years. Healy et al. (1992) find that in the 50 largest US M&A transactions, the combined firms showed significant abnormal improvements in asset productivity, but no significant abnormal increase in operating cash flow margins. In another study, Healy et al. (1997) find that for the 50 largest US M&A transactions, the operating cash flow returns as a result of the merger met but did not exceed the premium paid, making large M&A transactions a net neutral activity from a value standpoint. In a more recent study, Blonigen and Pierce (2015) find significant evidence of increased market power (as measured by product markups), however they find no evidence of any increase in plant-level productivity. Further, the authors find that the differences in markups tend to overstate the effects of mergers on traditional revenue productivity measures.

Regardless of whether real efficiency gains are created through M&A, target company management will require a premium to the existing share price for two main reasons. First, target company management will require a premium to give up control of their assets.[12] Second, to encourage support of the transaction, the acquirer must provide incentive for shareholders. Once we establish that premiums are required to takeover firms, the next logical question is, "how much of a premium should we pay"? Several studies examine the determinants of merger premiums and historically, the research has focused on firm and deal-level characteristics.

[12] It is unlikely that target management would move forward with the combined firm (particularly in transactions involving a change in control)

Sonenshine and Reynolds (2013) suggest that the premium paid in a particular cross-border deal should be indicative of the extent to which management can evaluate the synergies. In analyzing firm and deal-level characteristics, they find the percentage of shares being acquired to be positively correlated with deal premium and that the effect is increasingly prevalent in emerging markets. They also find that the ownership acquired is increasingly important when the target has higher levels of intangibles assets (such as patents, intellectual property, and goodwill). Alexandridis et al. (2007) and Alexandridis et al. (2013) find that acquirer's pay significantly lower premiums for larger targets. One explanation provided by the authors is that as a result of target size, the post-merger integration process is more complex and the transactions often fail to yield the assumed pre-transaction synergies. An additional explanation is that there is inherently less competition for larger firms as there are fewer firms that could practically pursue an acquisition. Further, due once again to the increased complexity of larger businesses, Alexandridis et al. (2007) go on to show that investors perceive these deals as more uncertain and hence result in lower premiums. Donker and Zahir (2008) find that bid premiums are negatively associated with ownership concentration, providing empirical support for the theoretical takeover models that propose a negative relations between corporate valuation and ownership concentration.

It is commonly understood that firms with better corporate governance tend to command higher valuations, resulting in a lower costs of capital (La Porta et al., 2002; Bhattacharya and Daouk, 2002; Gompers et al., 2003).[13] For example, Gompers et al. (2003) find that US firms with stronger shareholder rights have higher firm value, higher profits as well as positive and statistically significant abnormal returns. Building on Gompers et al. (2003), Bebchuk and Cohen (2008) find that US firms that have low entrenchment scores are associated with positive and statistically significant abnormal returns[14]. Similarly, Daines (2001) finds evidence in the US that firms incorporated in Delaware, a state largely believed to be the most protective of investor rights, have higher valuations than firms incorporated in other US states. These studies demonstrate that corporate governance and investor protection are important considerations for

[13] Bhattacharya and Daouk (2002) find that in countries where insider trading laws are enforced the cost of equity for a country is reduced (improved) by 5%

[14] Bebchuk and Cohen (2008) create an index composed of six provisions: (1) staggered boards, (2) limits to shareholder bylaw amendments, (3) poison pills, (4) golden parachutes, (5) supermajority requirements for charter amendments, (6) supermajority requirements for mergers, to measure the level of entrenchment that is present at a given firm

corporate valuation. In terms of cross-border M&A, the answer is not as clear. One way to interpret these findings is to consider that the private benefits of control are higher in countries with poorer corporate governance and investor protection standards. As an acquiring firm, the ability to integrate the target post-transaction close may be more difficult in an environment in which insiders have systematically abused their position.

If insiders can systematically expropriate value from outside investors, their willingness to contribute capital is more limited. As a result, at the firm level, managers are often subject to both internal and external mechanisms that incentivize them to act in the best interest of shareholders. For example, Fama and Jensen (1983) propose that the board of directors provides a form of internal control while Scharfstein (1988) and Jensen and Ruback (1983) suggest that the market for corporate control plays an external role in shaping management decision making by rewarding good management and punishing weak management. Cremers and Nair (2005) find evidence that both internal (board of directors, etc.) and external (market for corporate control) are complementary in nature as well as associated with positive long-term abnormal returns and higher firm valuation as measured by Tobin's Q. Comment and Schwert (1995) find that takeover premiums are higher when the target firm has adopted a poison pill right or when it is protected by state laws. This finding also suggests that both internal and external mechanisms impact the takeover premium.

2.4 Cross-border Merger & Acquisition Premiums

In the study most closely related to ours, Rossi and Volpin (2004) find that in a sample of 4007 M&A transactions representing 35 target countries, takeover premiums are higher in countries with higher levels of investor protection and higher accounting standards.[15] The authors also find that larger deals are associated with lower premiums. At the deal-level, Rossi and Volpin (2004) find that dummy variables for cross-border, hostile bid, tender offer, and contested bid are all positively related to target premium, with cross-border, tender offer, and contested bid being significant at the 10%, 1% and 5%, respectively. Interestingly, they do not

[15] The authors use a proxy for investor protection computed as the product of the rule of law index and the anti-director rights index divided by 10. The values range from zero to six with zero representing the weakest levels of investor protection and six representing the strongest levels of investor protection. As described later, we construct a similar measurement of investor protection using the product of rule of law and the anti-self-dealing index divided by 10

find the hostile bid dummy significant, consistent with Schwert (2000). To test whether the premium measures the private benefits of control, Rossi and Volpin (2004) control for the difference in acquirer and target shareholder protection and find the result insignificant. The interpretation of this finding presumes that the premium is not a proxy for the private benefits of control and that managers are not willing to pay a higher premium for personal gains. Further, this finding suggests that the premium represents the expected gain available to all shareholders. That is, managers of the acquiring firm are confident that they will achieve the expected efficiency gains and that in doing so they can compensate target shareholders with the premium without overpaying.

Starks and Wei (2013) find that the takeover premium in cross-border M&A is negatively and significantly correlated with the quality of the acquirer's country-level corporate governance regime, particularly when the method of consideration is stock. The authors suggest that foreign acquirers compensate target firm shareholders for exposing them to inferior accounting standards. Using several proxies for investor protection and corporate governance, this study focuses on a sample of domestic and cross-border deals involving only US targets. The authors suggest that foreign bidders need to compensate target firm shareholders for the exposure to higher corporate governance risks. One key assumption the authors make is that the US has the highest level of corporate governance; and that in any acquisition of a US target, the investment risk profile for the existing US investors is increased. One plausible explanation here is that US institutional investors are hesitant to accept stock as consideration due to the frictions associated with owning foreign securities (despite the tax advantages of stock transactions). Furthermore, the assumption that the US has the highest levels of corporate governance is highly contestable and it may be such that higher premiums are just a feature of US targets, which would be consistent with Rossi and Volpin's (2004) findings. However, the key takeaway from Starks and Wei (2013) is that investors attribute value to superior corporate governance regimes and that in countries where superior governance regimes are systematically facilitated, on average, firms will command higher merger premiums.

Weitzel and Berns (2006) find in a study of 4,979 cross-border and domestic takeovers that a one-point decrease (on a 10 point scale) in the target country's corruption index is associated with a decrease in the premium paid of 21%. Although they do not find corruption to be a

significant deterrent to cross-border M&A, they do find that increased corruption represents an increased risk to buyers. As a result, the discount applied to the business is greater. Sonenshine and Reynolds (2013) find evidence that suggests firms will pay a higher premium to acquire greater control over a foreign firm's assets, and this relation is even stronger when the target is in a developing country.

2.5 Hypothesis Development

Following the literature review, it should be clear that cross-border M&A involves additional complexity and risks, due to the foreign nature of the target company, which results in differences in investment characteristics between acquirer and target. It follows then that the acquiring firm's management may be willing to pay a higher premium for targets located in countries that systematically reduce those risks. As noted, a country has several means by which to systematically reduce investment risks, however this paper focuses on the legal, regulatory and corporate governance avenues. Therefore, we formulate the following testable hypothesis:

Hypothesis: *The premium paid to effectuate cross-border M&A transactions will be positively associated with the target country's investment environment index*

3. Data

Our sample includes 1,952 cross-border M&A transactions involving targets from 63 countries and acquirers from 74 countries with a transaction size greater than US$25 million[16]. After analyzing our M&A data, we find transactions with targets in 41 of the 49 countries with available data (which accounts for 96.1% of the original sample), leaving 1,864 transactions. The sample data is acquired from two main sources; the M&A deal level data is from SDC Platinum and the country-level data is obtained from the website of Rafael La Porta.[17,18] The M&A data contains all cross-border mergers and acquisitions completed between January 1, 1990 and December 31, 2015. In our sample we exclude spin-outs, recapitalizations, privatizations, and share repurchases. The sample excludes firms in the utilities and financial sectors as is consistent with prior studies. For clarity, the purpose for excluding these two sectors is primarily related to the historically regulated nature of their industries, both historically as well as the dramatic regulatory changes that occurred during our sample period.[19] Further, we anticipate the deregulation or liberalization that began in the US utilities industry in the early 1990s, and in the European Union in the mid to late 1990s would have an impact on the volume of M&A transactions. We expect the exploration of these structural policy changes to be the subject of other studies. An example of one such study is Kenessey (2013) who finds that deregulation is an important explanatory variable in determining the volume of cross-border M&A transactions that occurred in the European energy marketplace between 1990 and 2007.

[Insert Table 1: Observations and Average Premium across Countries]

Similar to Rossi and Volpin (2004), we are primarily concerned with transactions that involve a change of control because we want to assess the premium paid for potential synergies to the combined entity, and as such we exclude deals where the acquirer purchases less than 50.1% of the target's shares. As Rossi and Volpin (2004) point out, the quality and availability of data varies (in some cases quite substantially) across countries and over time. Particularly with poorer/smaller countries, there is a lag effect in terms of the data collection methods and

[16] The original sample includes 9,244 observations, 7,292 of which have missing or negative premium data
[17] SDC Platinum is provided by Thomson Reuters and is a primary source of M&A data for financial studies
[18] La Porta's datasets can be found at his website http://faculty.tuck.dartmouth.edu/rafael-laporta/research-publications/; for a summary of the variables used in this study please see the Appendix
[19] The regulation and changes to regulations that occurred over time have had meaningful implications for M&A, capital structure, dividend policies, and risk and return characteristics

over time that data quality tends to improve. We address this issue by replicating our study for transactions announced after December 31, 1999 and find very similar results (See Table 9 in the Appendix)

As expected, our deal premium data is highly concentrated between 0% and 75% with more than 85% of the observations falling between those values. The average premium for the entire dataset is ~46.7% and can fluctuate up or down by more than 20% (standard deviation of ~7.8%). By computing the three year rolling average annual premium, we can identify premium trends over time. In Figure 4 and Figure 5 below, we observe that the premium trends seem to be inversely related to M&A activity, particularly during the most recent waves.

[Insert Figure 2: Sample Premium Histogram]

[Insert Figure 3: Average Annual Premium Paid in Sample]

[Insert Figure 4: Three Year Rolling Average Annual Premium]

[Insert Figure 5: Annual Global Cross-Border M&A Value vs. Merger Premiums]

[Insert Figure 6: Premium Range and Measures of Central Tendency]

As mentioned, the country-level variables used in this study are provided primarily by Rafael La Porta and can be found at the website located in footnote 18 on the previous page. This dataset is commonly used in academic research that focuses on differences in country-level characteristics, as well as that literature which discusses the topics of the relations between law and finance. La Porta et al. (1998) develop an index called the anti-director rights index that was used as a measure of shareholder protection. The anti-director rights index was used in over 100 articles since its introduction in 1998 (Spamann, 2008).[20] The anti-director rights index is measured from 0 to 6 and constructed by adding one each time a country implements a specific measure of shareholder rights, including: (1) the ability to vote by mail, (2) whether or not there is a requirement to deposit your shares prior to a General Shareholders Meeting, (3) whether or not there is minority investor representation on the Board, (4) whether or not there is an oppressed minorities mechanism in the event of obvious expropriation, (5) whether or not all

[20] Spamann (2009) criticizes the accuracy and merits of the anti-director rights index and suggests revisions for the majority of countries analyzed. The study finds that many of the key findings are not supported using the revised values.

shareholders have the right to purchase additional shares on the same terms as management, and (6) whether or not there is a mandatory dividend rule. Some of the central findings of the anti-director rights index were that better investor protection is associated with broader and deeper capital markets (La Porta et al., 1997), that common law countries provide better protection to minority investors than civil law countries (La Porta et al., 1998), and that better investor protection leads to less ownership concentration for firms listed on a country's stock market. By pioneering the quantification of legal rules, the authors had created a groundbreaking innovation. In response to criticisms based on the ad hoc nature of the anti-director rights index and the methods used to collect data, Djankov et al., (2008) construct a new index to address the strength of minority investor protection against self-dealing by controlling shareholders that is better grounded in theory. This index is created with the help of Lex Mundi law firms and assesses the difficulty or "hurdles" that an insider must jump in order to get away with self-dealing, the higher the hurdles, the higher is the anti-self-dealing index. Importantly, as Djankov et al. (2008) states, a possible limitation of the anti-self-dealing index methodology is that the law on the books does not necessarily reflect the true legal environment. Encouraged by the innovative approaches of La Porta et al. (1998) and Djankov et al. (2008), we endeavor to address this issue by creating our own index, using principal component analysis. Our index encompasses several measures of legal and regulatory protection and corporate governance across countries. We intend to use our index to explain differences in premiums paid to effectuate cross-border M&A transactions.

Despite the fact we believe the investment environment index to be a strong proxy for country-level investment characteristics, there are undoubtedly other important country-level variables that we do not consider. For example, Rossi and Volpin (2004) find countries that have the same official language, are in the same geographic area, and countries that have higher bilateral trade are important motives for cross-border mergers and acquisitions. Similarly, Stulz and Williamson (2001) find openness, culture and religion, at the country-level, play an important role predicting how countries enforce certain financial rights. And, because our study is principally focused on studying the effects of legal, regulatory and corporate governance standards, we do not included these variables in our work.

4. Research Methodology

Our study uses cross-sectional data to explore the country-level determinants of cross-border M&A premiums. As previously discussed, many country-level characteristics are highly correlated. The highly correlated nature of these variables (such as rule of law, accounting standards, ability to enforce contracts, investor protection, judicial efficiency, and risk of expropriation) causes empirical issues. The principal issue is that highly correlated independent variables can cause estimation problems. To quote Peter Kennedy, "Although the estimation procedure does not break down when the independent variables are highly correlated (i.e. approximately linearly related), severe estimation problems arise" (Kennedy, 2001, pp. 183). Highly correlated independent variables leads to multicollinearity which in turn leads to large variances in the ordinary least squares ("OLS") estimates of the parameters. Or put another way, there is simply not enough *independent* variation among the variables for the OLS procedure to confidently estimate the impact of each independent variable on the dependent variable.

[Insert Table 2: Correlation Matrix]

There are two ways to deal with the issue of multicollinearity arising from highly correlated variables. The first option is to do nothing. The presence of multicollinearity in a dataset does not necessarily mean the variance of the estimated coefficients are unacceptably high (Kennedy, 2001, pp. 187). As we can see from our results in Table 4, using this option and including all the variables in a regression without making any adjustments yields weak results. The option of inaction is not our first choice and despite some situations where it may be acceptable, we do not use this approach in our study. The second option is to incorporate additional data. However, incorporating additional information is relatively vague and there are several methods by which to do this, including: obtaining more data, formalizing the relations among variables, dropping one or some variables, or forming a principal component (Kennedy, 2001, pp. 189). In this study we focus on forming a principal component. By forming a principal component, the highly correlated variables can be combined into a composite index that represents the entire group of underlying variables. In our study we keep only the first principal component, which is formed

by weighting each variable so that the newly created composite index maximizes the total possible variation from the underlying variables.[21,22]

The variables we combine are as follows:

(1) Accounting Standards

(2) Judicial Efficiency

(3) Risk of Contract Repudiation

(4) Risk of Expropriation

(5) Common Law dummy variable

We combine these variables because theory and practice yield convincing arguments that management (and investors) consider the effect these variables have on their ability to realize the estimated synergies associated with the transaction. Although we previously discussed the anti-director rights index and the anti-self-dealing index in detail, we do not include these variables in our composite index. The reason for this is twofold. The first is that the managers of the acquiring firm are not going to be minority shareholders of the combined firm and as a result, they will not be as concerned about minority shareholder rights. The second reason is, as Rossi and Volpin (2004) point out, that target firms typically adopt the governance standards of the acquirers. And so, while it may be true that management of the acquiring firm is partial to self-dealing transactions, they will almost always still be governed by the same standards as they were prior to the transaction. We contend that by combining the five variables listed above we will achieve a good proxy for the investment environment in which an acquiring firm is pursuing an acquisition. We further contend that by combining these variables we are adequately capturing some of the risks associated with forced expropriation, contract repudiation, lack of structure and efficiency (and even outright corruption) in the judicial system, and corporate

[21] As Kennedy suggests in A Guide to Econometrics, the most common way to employ principal component analysis is to use only the first component of the variables

[22] The first principal component accounts for approximately 55% of the total variance in the underlying variables

disclosure requirements. It is for these reasons that we expect this newly created index variable to be strongly and positively correlated with cross-border merger premiums.

[Insert Table 3: Variable Summary Statistics]

4.1 Estimation Methods

To begin, our study uses an OLS model to analyze the country-level determinants of M&A premiums while controlling for various deal and firm-level characteristics. Similar to Rossi and Volpin (2004), we will use the following model specifications to analyze the data:

(1) $$\ln(\text{Premium}) = \alpha_i + \beta_1 \ln(\text{Target Size}_j) + \beta_2(\text{Ownership}_j) + \beta_3 X_i + \varepsilon$$

(2) $$\ln(\text{Premium}) = \alpha_i + \beta_1(\text{Investment Environment}_i) + \beta_2 \ln(\text{Target Size}_j) + \beta_3(\text{Ownership}_j) + \beta_4 Z + \varepsilon$$

In Equation (1) we will analyze how each input variable for the investment environment will affect the merger premium on a standalone basis. In equation (1), X represents the individual country-level indices that make up the investment environment. In Equation (2) we will include the investment environment index in our regression and control for other firm-level and deal-level characteristics represented by Z.

Dependent variable: Premium

The Premium is the ratio of the takeover offer to the target's closing price four weeks prior to announcement of the transaction. The calculating of this variable is consistent with prior premium related literature (Rossi and Volpin, 2004; Sonenshine and Reynolds, 2013). Premiums are known to be noisy by nature and the decision to use the stock price four weeks prior to announcement in the denominator is an attempt at observing an unaffected stock price. Table 1 provides evidence of the information leakage that occurs over the 4 week period leading up to announcement of the transaction. With that said, we do provide a robustness test in Table 6 to confirm our findings.

Test variable: Investment Environment

The Investment Environment is measured as the first principal component of the common law dummy variable, the accounting standards index, the risk of contract repudiation, the risk of expropriation index, and the judicial efficiency index.

Control Variables: Size, Ownership

The Target Size is measured as the total assets of the target firm (in US$MM). This figure is measured as of the most recent quarterly results prior to transaction announcement. The Ownership variable is measured as the proportion of total shares outstanding that was acquired. Since we are only interested in transactions where the acquirer purchases a controlling stake in the target, we restrict the data to a range between 50.1% and 100%.

Additional Control Variables:

In multiple regressions we control for various other factors that may impact the explanatory power of our investment environment composite index. Other variables that we control for and their expected sign are outlined in the table below:

(1) **GDP Growth**: the natural logarithm of average annual GDP per capita growth *(+)*
(2) **Horizontal**: dummy variable that equals 1 if the target and the acquirer are in the same industry, and zero otherwise *(+)*
(3) **Glamour Firm**: the current market valuation of the firm as measured by the log of the price to earnings ratio measured four weeks prior to announcement *(+)*
(4) **Challenge**: dummy variable that equals 1 if the deal was challenged and 0 otherwise *(+)*
(5) **US or UK Target**: dummy variables that equals 1 if the target is located in the US or the UK, and zero otherwise *(+)*

5. Empirical Results

As a first step, we begin by running a regression analysis using the variables we use to compose our investment environment index. The standard errors are shown in parentheses and are adjusted for heteroscedasticity using the Huber (1967) and White (1980) corrections. The regression results are shown Table 4 below and each column is used to measure the relation between one principal component input variable and the premium while also controlling for size, ownership percentage, and fixed effects for year and industry. In column 6 we include all the variables that will be used to create our investment environment index.

Column 1 measures the relation between the common law dummy variable proposed by La Porta et al. (1998) and find it is positively correlated with the premium. Indicating that common law countries on average command premiums that are 7.8% higher than civil law countries. Similar to La Porta et al. (2002), it is possible this result is driven by the unbalanced nature of our sample, which includes approximately 78% of observations owing to common law legal origins. In column 2 we drop the common law variable and include accounting standards. As anticipated the coefficient is positive, although contrary to expectation it is insignificant. One plausible explanation for this finding is that throughout the M&A process, the acquirer will conduct comprehensive financial due diligence and have access to very detailed information allowing them to assess the financial accuracy of the business without relying on external financial statements. If this explanation is true, we should expect accounting standards to be a more useful predictor of merger volume rather than merger premium, as Rossi and Volpin (2004) find.[23] With that being said, we note that accounting standards appears to have better explanatory power than common law, contract risk, or the risk of expropriation. Column 3 drops the accounting standards index and includes the risk of contract repudiation index, which has a positive relation with the premium paid, but again is insignificant. Column 4 replaces the risk of contract repudiation index with the risk of expropriation index. The coefficient is positive and significant at the 10% level, indicating that acquirers will pay a higher premium when there is less risk of forced expropriation by government. In column 5 we substitute the risk of

[23] Note that the acquirer would not likely have access to in-depth financial materials in the event of a hostile takeover. Rossi and Volpin (2004) find that better accounting standards are positively and significantly correlated with increased incidence of hostile takeovers which we interpret as acquirers having enough high quality accounting information to adequately de-risk the acquisition without the need for comprehensive in-depth financial diligence that may be required in a country with weaker accounting standards.

expropriation index for the judicial efficiency index, which can be thought of as the ability to enforce the judicial rulings as it affects business, and in particular foreign firms (La Porta et al., 1998). The judicial efficiency index is positive and statistically significant at the 1% level. In column 6 we include all the key variables in columns 1 through 5 and find only the judicial efficiency index remains positive and statistically significant, albeit at the 5% level. Despite the weakly significant results in this table, theory and intuition tell us that investors ascribe value to investments when they feel their capital is better protected and they are better able to understand the risks associated with the investment.

[Insert Table 4: Regression results with input variables]

In Table 5 we include our investment environment index, the first principal component of the five key variables in Table 3, in all our regressions. Our results find a positive and significant relation between the investment environment index and cross-border M&A premiums, providing meaningful support for our hypothesis. We test the robustness of this finding by running multiple specifications with various additional control variables. In each column we control for the size of the target firm (which we would expect to be negatively related to the premium), and the percentage of the target firm's outstanding shares that are purchased in the transaction (which we would expect to be positively related to the premium), as well controlling for year and industry fixed effects.[24, 25]

In column 1 we show basic controls including target size and ownership. All of the signs are as anticipated and each variable is significant at the 1% level. Our results suggest that, on average, a one standard deviation increase in the investment environment index (a material change representing the approximate difference between a target in Malaysia (Rank 22/41) and a target in the United Kingdom (Rank 1/41)) correlates with a 19.3% increase in the merger premium. Column 2 includes controls for the natural logarithm of the average GDP per capita growth over the study time horizon and a dummy variable that is 1 if the acquirer is pursuing a horizontal merger, as measured at the two SIC digit level.[26] As we would expect, both variables

[24] Moeller et al. (2004) find that there is a negative relation between takeover premiums and the size of the target (as measured by the natural logarithm of the equity value)
[25] Sonenshine and Reynolds (2013) find a positive relation between the takeover premium and the percentage of target firm shares acquired
[26] Both approaches are common in the precedent literature; see Wurgler (2000) and Weiner (2005) respectively

are positively related to merger premiums, but interestingly neither is significant. It is possible that as a result of the averaging methodology and the lengthy time horizon for the study we lose some of the effect of GDP per capita growth on merger premiums.[27] As it relates to acquiring targets in a related industry, our finding of insignificance is consistent with Datta and Puia (1995) and Sonenshine and Reynolds (2013) but contradicts the findings of Markedes and Ittner (1994) and Marr et al. (2006) who find a positive impact on shareholder value but also find the coefficient is significant. In column 3 we include a control variable for the target's market valuation as measured by its price-to-earnings ratio 4 weeks prior to announcement of the transaction. The result is a positive and significant coefficient which may seem counter-intuitive at first, however, it is consistent with both the Hubris Hypothesis proposed by Roll (1986), as well as Hayward and Hambrick (1995) who show that past managerial performance is associated with higher takeover premiums. Roll's (1986) Hubris Hypothesis suggests that the acquiring firm's management can suffer from hubris and meaningfully overestimate their ability to create value and achieve synergies and, as a result, overpay for targets. In column 4 we control for deals in which the initial acquisition announcement was met with a competing bid from another acquirer. As we would expect the coefficient is positive and significant. The increased competition for the target leads each prospective acquiring firm to try and outbid the other, resulting in a higher premium. In column 5 we include all the previously included control variables and find that our investment environment index remains significant at the 1% level. In column 6, we follow the example of Rossi and Volpin (2004) and include a dummy variable if the targets are located in the UK or the US. Since there are 605 observations where the target is located in the US (representing approximately 32% of our sample) and 291 observations where the target is located in the UK (representing approximately 16% of our sample), we want to ensure our results are not being driven by the US and UK investment environments. We also drop the GDP per capita growth and the horizontal merger variables as they proved to be insignificant. Unlike Rossi and Volpin (2004) who find their main investor protection variable is no longer significant when they include US and UK dummies, we find our investment environment index remains positive and significant. We also find that the coefficients on US and UK dummy variables are positive, but insignificant. We interpret that to mean our results are not

[27] We use a country's average GDP growth per capita over the sample period as a proxy for country-level GDP growth. Despite the obvious limitation of this methodology, we do not investigate the issue further as we would not expect GDP growth to change the relation between the investment environment index and merger premiums

being driven by US and UK targets; rather our investment environment index is positively and significantly related to cross-border merger premiums. Despite the slight loss of significance, we find a one standard deviation increase in the investment environment index (a material change representing the approximate difference between a target in Malaysia (Rank 22/41) and a target in the United Kingdom (Rank 1/41)) correlates with a 16.3% increase in the merger premium. These findings support our hypothesis and lead us to have confidence that a country's legal and regulatory investment characteristics are positively related to the premium paid in cross-border M&A.

[Insert Table 5: Investment Environment Index]

5.1 Additional Robustness Test

To evaluate the robustness of our results, we repeat our analyses using premium as measured by the takeover offer to the target's closing price one day prior to announcement of the transaction. We note that our sample was designed to provide the maximum number of observations for premiums four weeks prior to announcement and as such we have fewer observations for premiums one day prior to announcement. Despite this, we find that our results are very similar to our primary results. Schwert (1996) studies the relation between takeover premiums and the pre-announcement stock price run-ups that are commonly observed ahead of M&A transaction announcements and finds that the merger premium is determined based on the market price the day before the first bid, that is, the pre-announcement run-up does not generally matter. This finding suggests that the run-up in share price represents a future cost to the bidder as they do not adjust their takeover premium accordingly. If this were the case then we would expect the coefficients on our variables as well as the sign and significance to be relatively unchanged as time draws nearer to the transaction announcement date, which is consistent with our findings.

[Insert Table 6: Robustness Results]

In column 1 we again find there is a positive relation between the investment environment index and cross-border merger premiums. Target size remains negative and significant while ownership remains positive but is no longer significant. Column 2 includes GDP per capita growth rate and a dummy variable for mergers in the same industry. Interestingly, in this

regression we find a positive and significant coefficient for mergers in the same industry. As in Table 4, Column 3 controls for the target's market valuation, as measured by the price-to-earnings ratio and again we find a positive and significant association, indicating past investors will pay for past performance and higher implied growth. We observe the coefficient for target size loses significance in this regression, as well as a small loss of significance on the investment environment index to the 5% level. In column 4 we include the challenged deal flag and again find a positive and significant relation. Column 5 controls for GDP per capita growth, mergers from the same industry, the targets market valuation, and the challenged deal flag. Our investment environment index remains significant at 5% and we lose significance on the target size coefficient. In column 6 we again include a dummy variable for US and UK targets and find the coefficient is positive and significant at the 5% level. We also observe that we lose significance on our investment environment index which we interpret as our results being driven by US and UK M&A premiums. This result is consistent with the findings Rossi and Volpin (2004) who find their key country-level variable becomes an insignificant predictor of premiums when they control for US and UK firms. Interestingly, in this series of regressions the percentage of ownership acquired is only weakly significant in columns 3 and 5 and not significant in columns 1, 2, and 6.

As we discussed earlier in the paper, a country's legal origin is truly exogenous by definition. An argument could be made that the inclusion of the common law dummy variable in the investment environment index is driving our results. To test this argument, we run the same OLS regression analysis, however we exclude the common law dummy variable in the construction of the principal component.[28]

[Insert Table 7: Additional Robustness Results]

[Insert Table 8: Additional Robustness Results]

In Table 7 we observe the results are very similar to our primary empirical results of Table 5 indicating that a country's legal origins are not disproportionately driving our results. Despite the apparently lack of contribution from the common law dummy variable to the results, we

[28] The revised principal component includes Accounting Standards, Judicial Efficacy, Risk of Contract Repudiation, and Risk of Expropriation

believe it is an important consideration for the acquiring firm's management when making an acquisition decision. To test this relation, between the common law dummy variable and cross-border M&A premiums, we perform an additional regression excluding the investment environment index entirely. We find the effect of the common law dummy variable to be of only minor importance in explaining cross-border M&A premiums. Interestingly however, in column 7 we find the dummy variable for US or UK targets to be positive and statistically significant at the 10% level, while these countries represent approximately 61% – the lions share – of the common law observations. The implication of these findings is that although we believe the target country's legal system to play a critical role when acquiring firm's managers contemplate an acquisition, the legal system is largely assessed by other, perhaps more specific, measures – such as the judicial efficiency, the risk of expropriation, or the risk of contract repudiation.

6. Conclusion

It is argued that the market for corporate control is a substitute for an effective legal and regulatory system that protects shareholders from expropriation (Manne, 1965; Jensen, 1993). However, our findings suggest that a formal legal and regulatory environment that reduces risk and increases transparency may foster a more conducive environment for changes in corporate control to occur (Coffee, 1999; Rossi and Volpin, 2004). Additionally, when the investment environment is systematically more favorable, foreign investors are willing to pay higher premiums to acquire target firms. Simply put, our results indicate that a country's investment environment has a meaningful impact on corporate valuations. We suggest our findings can be interpreted as foreign buyers having more confidence in the target's merits as an investment as a result of the reduced risk attributable to the enhanced investment environment. The investment environment in this case being measured by the legal and regulatory framework, investor protection, and disclosure requirements. All things equal, investors are prepared to part with more of their capital when they feel confident that the risk of expropriation is lower. Further, investors are again inclined to part with more of their capital if they feel that they have legitimate recourse in the event they are treated unfairly or fraudulently mislead. And finally, investors will part with more of their capital when they believe they are well informed and the risk of purchasing a lemon is lower.

By using principal component analysis to construct a new measure of a country's investment environment, our study was able to address the empirical issue of collinearity across country-level variables. We were also able to demonstrate that acquirers are aware of, and concerned about, a country's investment environment as it relates to their ability to protect and grow their capital within the existing legal and regulatory framework of the target country. Our paper puts forth additional evidence to support the compelling argument for improved legal and regulatory standards, transparency, and investor protection across countries.

With that being said, our findings are certainly not without limitations. A central piece of our story is that globalization is driving increased cross-border M&A transactions, which intuitively implies the global marketplace is changing over time. Our investment environment variable however, is composed of several static measurements representing the investment characteristics of each country at a certain point in time. The implication here is that our investment

environment variable does not account for the changes that occur at each country over time. One possible way to combat this issue is to use panel data to measure the changes in country-level characteristics over time. Kenessey (2013) uses panel data for 22 European countries for the period of 1990 to 2007. The study finds that the difference in acquirer and target accounting disclosure and investor protection measures are positive and significantly related to M&A activity. A further limitation to our study is that, despite the useful nature of the measures for country-level investment characteristics (such as judicial efficiency, risk of expropriation, etc.), these are proxy indices remain far from perfect. We explain this issue with a logical and rational argument. Although we are using these proxies to measure the underlying country-level investment characteristics, we do not practically anticipate that the acquirer's management would base their merger premium on, for example, the risk of expropriation index (nor our investment environment index for that matter). We simply argue that the scope of the acquirer's pre-transaction due diligence is not limited to one variable, but rather a broader investment environment that is comprised of several interrelated institutional forces. We aim to provide only one new perspective on how management may be thinking about merger premiums in the context of cross-border M&A transactions.

Appendix

Definition of Variables – Country-Level Variables

Common Law	Equals one if the origin of the country's law is English Common Law, otherwise zero *Source: La Porta et al. (1998)*
Accounting Standards	Index created by the Center for International Financial Analysis and Research to rank the quality of disclosure in annual reports in the year 1990; a minimum of 3 companies were studied in each country *Source: La Porta et al. (1998)*
Risk of Contract Repudiation (Contract Risk)	ICR's assessment of the risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down due to budget cutbacks, indigenization pressure, change in government, or a change in government priorities. Scale of 0 to 10 with lower scores indicating higher risks. *Source: La Porta et al. (1998)*
Risk of Expropriation (Expropriation)	ICR's assessment of the risk of outright confiscation or forced nationalization between the years 1982 and 1995. On a scale of zero to 10 with lower scores indicating higher risk *Source: La Porta et al. (1998)*
Judicial Efficiency (Enforcement)	Assessment of the efficiency and integrity of the legal environment as it affects business, particularly foreign firms, produced by Business International Corp. Scale of zero to 10 with lower scores indicating lower levels of efficiency *Source: La Porta et al. (1998)*
Investment Environment	Index created for this paper using the first principal component of the following five variables: (1) common law, (2) accounting standards, (3) contract risk, (4) risk of expropriation, and (5) judicial efficiency

Definition of Variables – Other Variables

Premium	Bid price as a percentage of the closing price of the target four weeks prior to the transaction announcement *Source: SDC Platinum*
Target Size	Logarithm of the target company's total assets as at the most recent quarter end in US$ millions *Source: SDC Platinum*
Ownership	The percentage of the target's basic shares outstanding acquired by the purchaser *Source: SDC Platinum*
Challenged	Equals one if the number of bidders is greater than one and zero otherwise *Source: SDC Platinum*
Horizontal	Equals one if the SIC codes of the target and the acquirer match at the two digit level and zero otherwise *Source: SDC Platinum*
Glamour Firm	The ratio of the price to earnings of the target company prior to the transaction announcement *Source: SDC Platinum*
GDP Growth	The target country's average GDP per capita growth rate between 1990 and 2015 *Source: World Bank Dataset*

References

Akerlof, G. A. (1970). The market for" lemons": Quality uncertainty and the market mechanism. The Quarterly Journal of Economics 84(3), 488-500.

Alexandridis, G., Fuller, K. P., Terhaar, L., & Travlos, N. G., 2013. Deal size, acquisition premia and shareholder gains. Journal of Corporate Finance 20, 1-13.

Andrade, G., Mitchell, M., Stafford, E., 2001. New evidence and perspectives on mergers. Journal of Economic Perspectives 15, 103–120.

Bebchuk, L. and M. Roe, 1999, A Theory of Path Dependence in Corporate Ownership and Governance Stanford Law Review, Vol. 52, pp. 127-170.

Bebchuk, L., Cohen, A., 2005. The costs of entrenched boards. Journal of Financial Economics 78, 409–433.

Beck, T., Levine, R., Loayza, N., 2000. Finance and the sources of growth. Journal of Financial Economics 58, 261-300.

Beck, T., Demirguc-Kunt, A., Levine, R., 2003. "Law and finance: why does legal origin matter?" Journal of Comparative Economics, vol.31 (4), pages 653-675.

Bhattacharya, U., Daouk, H., 2002. The world price of insider trading. Journal of Finance 57, 75–108.

Black, B.S., 1989. Bidder overpayment in takeovers. Stanford Law Review 41: 597-660.

Bradley, M., A. Desal and E. Kim, 1988. Synergistic gains from corporate acquisition and their division between the stockholders of target and acquiring firms, Journal of Financial Economics 17 3-40.

Damodaran, A. The Value of Synergy, Stern School of Business, pp. 183, 2005.

Demirguc-Kunt, A. and Maksimovic, V., 1996. Stock market development and financing choices of firms, World Bank Economic Review, 341-371.

Demirguc-Kunt, A. and Maksimovic, V., 1998. Law, finance and firm growth, Journal of Finance 53, 2107-2137.

Djankov, Simeon, La Porta, Rafael, Lopez-de-Silanes, Florencio, Shleifer, Andrei, 2008b. The law and economics of self-dealing. Journal of Financial Economics 88 (3), 430–465.

Donker, H., & Zahir, S., 2008. Towards an impartial and effective corporate governance rating system. Corporate Governance, 8(1), 83-93.

Easterbrook, Frank, and Daniel Fischel. 1991. The Economic Structure of Corporate Law.

Erel, I., Liao, R.C., Weisbach, M.S., 2012. Determinants of Cross-Border Mergers and Acquisitions. Journal of Finance 67, 1045-1082.

Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. Quarterly Journal of Economics 118, 107–155.

Gort, M., 1969. An economic disturbance theory of mergers, Quarterly Journal of Economics 83:4, 623-42.

Grossman, S., Hart, O., 1980. Takeover bids, the free-rider problem and the theory of the corporation. Bell Journal of Economics 11, 42–64.

Grossman, S., Hart, O., 1986. The costs and benefits of ownership: A theory of vertical and lateral integration. Journal of Political Economy 94, 691-719.

Grossman, S., Hart, O., 1988. One-share-one-vote and the market for corporate control. Journal of Financial Economics 20, 175-202.

Haidar, J.I., 2009. Investor protections and economic growth. Economics Letters 103(1): 1-4.

Harford, J., 2005. What drives merger waves? Journal of Financial Economics 77, 529–560.

Hay, J., Shleifer, A., Vishny, R.W., 1996. Toward a Theory of Legal Reform. European Economic Review 40(3-5), 559–67.

Holmstrom, Bengt, and Steven N. Kaplan, 2001, Corporate governance and merger activity in the United States: Making sense of the 1980s and 1990s, Journal of Economic Perspectives 15, 121–144.

Jensen, M., Meckling, W., 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. Journal of Financial Economics 3, 305–360.

Jensen, M., 1986. Agency costs of free cash flow, corporate finance, and takeovers. American Economic Review Papers and Proceedings 76, 323–329.

Kenessey, M., 2013. The Role of EU Deregulation in the European Electric and Gas Utilities Merger Wave: An Empirical Analysis of Cross-Border M&A (Unpublished Master's Thesis, HEC Paris, Paris, France). Retrieved from http://campus.hec.fr/club_finance/wp-content/uploads/2014/07/N104.pdf

King, Robert G. and Levine, Ross. "Finance and Growth: Schumpeter Might Be Right." Quarterly Journal of Economics, August 1993a, 108(3), pp. 713-37.

King, Robert G. and Levine, Ross. "Finance, Entrepreneurship, and Growth." Journal of Monetary Economics, December 1993b, 32(3), pp. 513-42.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. Journal of Finance 52, 1131–1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. Journal of Political Economy 101, 678–709.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. Journal of Finance 54, 471–517.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000a. Investor protection and corporate governance. Journal of Financial Economics 58, 3–27.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000b. Agency problems and dividend policies around the world. Journal of Finance 55, 1–33.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2002. Investor protection and corporate valuation. Journal of Finance 57, 1147–1170.

Lombardo, Davide, and Marco Pagano (2000), "Legal Determinants of the Return on Equity", CSEF Working Paper, 24, October and CEPR Discussion Paper no. 2275, November.

Mitchell, M.L., and Mulherin, J.H., 1996. The impact of industry shocks on takeover and restructuring activity, 41:2, 193-229.

Morck, Randall, Andrei Shleifer & Robert Vishny. 1990. Do Managerial Objectives Drive Bad Acquisitions? Journal of Finance 45(1), 31-48.

Nelson, R. 1959, 'The First Merger Wave', in Merger Movements in American Industry, Nelson, Princeton University Press, Princeton, New Jersey, pp. 71–105.

Rhodes-Kropf, M.., Viswanathan, S., 2004. Market valuation and merger waves. Journal of Finance 59:6. 2686-2718

Rossi, S., Volpin, P.F., 2004. Cross-Country Determinants of Mergers and Acquisitions. Journal of Financial Economics 74, 277-304.

Schumpeter, J. 1934. The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle. Cambridge: Harvard University Press.

Shleifer, A., Vishny, R., 1986. Large shareholders and corporate control. Journal of Political Economy 94, 461–488.

Shleifer, Andrei, and Robert Vishny, 1988, Value maximization and the acquisition process, Journal of Economic Perspectives 2, 7-20.

Shleifer, Andrei, and Robert Vishny, 1989, Management entrenchment: The case of manager-specific investments, Journal of Financial Economics. 25, 123-140.

Shleifer, A., Vishny, R., 2003. Stock market driven acquisitions. Journal of Financial Economics 70, 295–311.

Sonenshine R., Reynolds K., 2014. Determinants of Cross-Border Merger Premia. Review of World Economics, 150, 173−189.

Starks, L.T., Wei, K.D., 2013. Cross-Border Mergers and Differences in Corporate Governance. International Review of Finance 13(3) 265-297.

Stigler, G. J. 1964. Public regulation of the securities markets. Journal of Business, 37: 117-42.

Stulz, R., and Williamson, R., 2003. Culture, Openness, and Finance, Journal of Financial Economics 70, 313–349.

White, H., 1980. A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. Econometrica 48, 817–838.

Wurgler, J., 2000. Financial markets and the allocation of capital. Journal of Financial Economics 58, 187–214

Table 1: Observations and Average Premium by Country

This table provides the number of observations, proportion of total observations, average premium four weeks prior and one day prior, as well as the change in premium over that time period.

Country	Number of Obs.	% of Total	Average Premium		
			4 Weeks	1 Day	Δ 4W / 1D
Argentina	1	0.1%	41.7%	31.3%	(10.4%)
Australia	154	8.2%	44.1%	37.1%	(7.0%)
Austria	8	0.4%	44.1%	53.7%	9.6%
Belgium	16	0.9%	56.3%	46.0%	(10.3%)
Brazil	4	0.2%	44.8%	37.5%	(7.4%)
Canada	268	14.3%	43.4%	34.7%	(8.8%)
Chile	7	0.4%	34.5%	24.9%	(9.7%)
Colombia	1	0.1%	34.1%	19.5%	(14.6%)
Denmark	17	0.9%	40.7%	33.0%	(7.8%)
Egypt	3	0.2%	71.5%	33.7%	(37.8%)
Finland	17	0.9%	40.8%	44.0%	3.1%
France	62	3.3%	35.3%	28.9%	(6.4%)
Germany	29	1.6%	33.4%	27.3%	(6.1%)
Greece	9	0.5%	19.9%	20.6%	0.7%
Hong Kong	20	1.1%	43.0%	31.0%	(12.0%)
India	6	0.3%	35.3%	18.0%	(17.3%)
Indonesia	7	0.4%	12.6%	5.0%	(7.7%)
Ireland	18	1.0%	58.9%	34.1%	(24.8%)
Israel	24	1.3%	50.2%	34.6%	(15.6%)
Italy	14	0.7%	36.2%	28.7%	(7.5%)
Japan	8	0.4%	28.8%	28.7%	(0.0%)
Malaysia	15	0.8%	54.4%	45.0%	(9.4%)
Netherlands	51	2.7%	43.3%	32.5%	(10.9%)
New Zealand	14	0.7%	44.3%	28.6%	(15.7%)
Nigeria	1	0.1%	124.6%	100.4%	(24.2%)
Norway	40	2.1%	46.4%	39.0%	(7.4%)
Pakistan	1	0.1%	85.8%	35.4%	(50.3%)
Peru	1	0.1%	33.0%	30.1%	(2.9%)
Philippines	3	0.2%	38.4%	37.5%	(1.0%)
Portugal	1	0.1%	32.9%	43.1%	10.2%
Singapore	31	1.7%	37.3%	22.5%	(14.8%)
South Africa	17	0.9%	32.8%	30.8%	(2.0%)
South Korea	6	0.3%	39.0%	30.2%	(8.7%)
Spain	10	0.5%	40.5%	30.3%	(10.2%)
Sweden	53	2.8%	46.8%	33.1%	(13.7%)
Switzerland	24	1.3%	36.7%	28.8%	(7.9%)
Taiwan	8	0.4%	27.3%	17.8%	(9.5%)
Thailand	4	0.2%	41.2%	33.5%	(7.7%)
Turkey	1	0.1%	23.5%	31.6%	8.2%
United Kingdom	291	15.6%	50.4%	42.2%	(8.2%)
United States	605	32.4%	48.9%	37.4%	(11.6%)
Total	**1,870**	**100.0%**			

Table 2: Pearson Correlation Matrix

This table reports the Pearson correlations across the variables used to create our investment environment index. The correlations are based on an unbalanced data set of 63 countries from January 1, 1990 through December 31, 2015. We find that all pairwise correlations are significant at the 1% level.

	Common Law	Accounting Standards	Risk of Expropriation	Judicial Efficiency	Risk of Contract Repudiation
Common Law Dummy	1				
	–				
Accounting Standards	0.2512***	1			
	(0.0000)	–			
Risk of Expropriation	0.1423***	0.2607***	1		
	(0.0000)	(0.0000)	–		
Judicial Efficiency	0.3685***	0.4834***	0.6505***	1	
	(0.0000)	(0.0000)	(0.0000)	–	
Risk of Contract Repudiation	-0.0819***	0.3822***	0.7988***	0.5830***	1
	(0.0004)	(0.0000)	(0.0000)	(0.0000)	–

p-Values in parantheses
* p<0.1, ** p<0.05, *** p<0.01

Table 3: Variable Summary Statistics

This table presents the summary statistics of the major dependent and independent variables. The primary dependent variable, Premium is measured by the ratio of the offer price relative to the unaffected trading price four weeks prior to the transaction announcement. In our regressions we adjust several of these variables using natural logarithms including: the target size, the ownership percentage, and the GDP per capita growth rate.

		Mean	SD	Min	Max	N
Premium						
Premium (4 Weeks)	*%*	45.8	31.5	0	175	1,870
Premium (1 Day)	*%*	36.2	28.8	0	173	1,815
Firm-level Variables						
Target Size (Total Assets)	*US$MM*	1,188	5,441	10	184,135	1,870
Glamour Firm	*x*	53.4	172.4	0.1	3,353.3	1,305
Deal-level Variables						
Ownership	*%*	92.8	13.9	50.1	100.0	1,870
Challenge	*y/n*	0.084	0.277	0	1	1,870
Horizontal	*y/n*	0.518	0.500	0	1	1,870
Transaction Value	*US$MM*	1,441	4,410	25	74,559	1,870
Country-level Variables						
Common Law	*score*	0.786	0.411	0	1	1,870
Accounting Standards	*score*	6.093	1.340	2.4	8.3	1,869
Judicial Efficiency	*score*	7.667	2.051	2.5	10.0	1,870
Risk of Expropriation	*score*	8.050	1.588	5.2	10.0	1,870
Risk of Contract Repudiation	*score*	7.580	1.785	4.4	10.0	1,870
Investment Environment	*component*	-3.326	3.812	-11.2	1.2	1,869
GDP Growth	*%*	1.562	0.603	0.4	4.7	1,862

Table 4: OLS Regression of PCA Input Variables on Merger Premium (Four Weeks Prior to Announcement)

This table presents the results of the regression analysis that includes the input variables used to create the principal component index.

	Premium Four Weeks Prior to Transaction Announcement					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Target Size	-0.0582***	-0.0573***	-0.0598***	-0.0609***	-0.0591***	-0.0581***
	(0.0116)	(0.0118)	(0.0117)	(0.0117)	(0.0116)	(0.0118)
Ownership	0.00750***	0.00818***	0.00790***	0.00740***	0.00681***	0.00671***
	(0.0017)	(0.0016)	(0.0016)	(0.0017)	(0.0017)	(0.0017)
Common Law	0.0996**					0.0354
	(0.0502)					(0.0597)
Acounting Standards		0.0415				0.00686
		(0.0271)				(0.0297)
Risk of Contract Repudiation			0.0580			-0.00173
			(0.0390)			(0.0623)
Risk of Expropriation				0.0747*		0.0112
				(0.0413)		(0.0633)
Judicial Efficiency					0.0803***	0.0728**
					(0.0250)	(0.0331)
Constant	3.135***	2.897***	2.687***	2.541***	2.578***	2.483***
	(0.3760)	(0.4260)	(0.5270)	(0.5340)	(0.4150)	(0.5280)
Number of Observations	1864	1863	1864	1864	1864	1863
Adjusted R-Squared	0.0716	0.0726	0.0713	0.0722	0.0776	0.0774
AIC	4511.7	4507.1	4512.2	4510.3	4499.5	4501.2
F-Statistic	4.7600	4.7700	4.6980	4.7080	4.8820	4.4770
Degrees of Freedom	1827	1826	1827	1827	1827	1822
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES

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

Table 5: OLS Regression of Investment Environment Index on Merger Premiums (Four Weeks Prior to Announcement)

This table presents the main findings. We regress the investment environment index and several control variables on cross-border merger premiums and find evidence that cross-border merger premiums can be, at least partially, explained by a country's investment environment.

	Premium Four Weeks Prior to Transaction Announcement					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Investment Environment	**0.0465*** (0.0164)**	**0.0485*** (0.0164)**	**0.0463*** (0.0174)**	**0.0455*** (0.0163)**	**0.0461*** (0.0173)**	**0.0397** (0.0191)**
Target Size	-0.0588*** (0.0117)	-0.0591*** (0.0116)	-0.0400*** (0.0142)	-0.0620*** (0.0116)	-0.0423*** (0.0141)	-0.0447*** (0.0145)
Ownership	0.00704*** (0.0017)	0.00707*** (0.0017)	0.00773*** (0.0020)	0.00688*** (0.0017)	0.00780*** (0.0019)	0.00743*** (0.0020)
GDP Growth		0.098 (0.0816)			0.0825 (0.0913)	
Horizontal		0.0487 (0.0385)			-0.00998 (0.0445)	
Glamour Firm			0.0768*** (0.0250)		0.0778*** (0.0244)	0.0750*** (0.0246)
Challenged				0.251*** (0.0727)	0.278*** (0.0743)	0.281*** (0.0740)
US or UK Target						0.0482 (0.0536)
Constant	3.310*** (0.3400)	3.262*** (0.3440)	2.799*** (0.4110)	3.279*** (0.3260)	2.713*** (0.4040)	2.782*** (0.4060)
Number of Observations	1863	1855	1300	1863	1292	1300
Adjusted R-Squared	0.0772	0.0778	0.0938	0.0835	0.1002	0.1009
AIC	4497.7	4480.3	3108.9	4486.0	3085.3	3100.6
F-Statistic	4.8750	4.7700	4.1970	5.1520	4.2260	4.2840
Degrees of Freedom	1826	1816	1262	1825	1251	1260
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES

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

Table 6: OLS Regression of Investment Environment Index on Merger Premiums (One Day Prior to Announcement)

This table presents the results of the primary robustness check. We test the same independent variables but change the dependent variable to be the merger premium as measured by the ratio of offer price to share price one day prior to transaction announcement.

	Premium One Day Prior to Transaction Announcement					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Investment Environment	**0.0598*** (0.0166)**	**0.0583*** (0.0168)**	**0.0443** (0.0180)**	**0.0587*** (0.0165)**	**0.0429** (0.0181)**	**0.0238 (0.0193)**
Target Size	-0.0376*** (0.0141)	-0.0406*** (0.0141)	-0.0201 (0.0175)	-0.0413*** (0.0141)	-0.0281 (0.0177)	-0.0301* (0.0176)
Ownership	0.00271 (0.0017)	0.00255 (0.0017)	0.00368* (0.0020)	0.00259 (0.0017)	0.00374* (0.0020)	0.0029 (0.0020)
GDP Growth		0.0137 (0.0879)			0.0814 (0.1020)	
Horizontal		0.101** (0.0470)			0.0871 (0.0554)	
Glamour Firm			0.102*** (0.0260)		0.100*** (0.0255)	0.0969*** (0.0251)
Challenged				0.248*** (0.0830)	0.326*** (0.0922)	0.343*** (0.0924)
US or UK Target						0.161** (0.0647)
Constant	3.332*** (0.3300)	3.359*** (0.3350)	2.722*** (0.3820)	3.289*** (0.3210)	2.658*** (0.3800)	2.683*** (0.3880)
Number of Observations	1786	1778	1249	1786	1241	1249
Adjusted R-Squared	0.0444	0.0448	0.055	0.0491	0.0628	0.0671
AIC	4826.8	4801.8	3366.7	4819	3333.9	3352.6
F-Statistic	4.135	4.046	3.847	4.437	4.017	4.328
Degrees of Freedom	1749	1739	1211	1748	1200	1209
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES

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

Table 7: OLS Regression of Investment Environment Index Excluding Common Law Dummy Variable on Merger Premiums (Four Weeks Prior to Announcement)

This table presents the results of an additional robustness check. In this test we exclude the common law dummy variable in the construction of the principal component that represents the investment environment.

	Premium Four Weeks Prior to Transaction Announcement					
	(1)	(2)	(3)	(4)	(5)	(6)
Investment Environment [(1)]	**0.0418****	**0.0452*****	**0.0442****	**0.0409****	**0.0455****	**0.0387****
	(0.0167)	**(0.0167)**	**(0.0179)**	**(0.0166)**	**(0.0177)**	**(0.0188)**
Common Law	0.0772	0.0528	0.0368	0.0747	0.0161	0.00958
	(0.0505)	(0.0523)	(0.0579)	(0.0503)	(0.0607)	(0.0699)
Target Size	-0.0581***	-0.0589***	-0.0399***	-0.0614***	-0.0424***	-0.0450***
	(0.0116)	(0.0116)	(0.0141)	(0.0116)	(0.0141)	(0.0145)
Ownership	0.00670***	0.00689***	0.00765***	0.00656***	0.00785***	0.00748***
	(0.0017)	(0.0017)	(0.0020)	(0.0017)	(0.0020)	(0.0020)
GDP Growth		0.0878			0.0853	
		(0.0842)			(0.0950)	
Horizontal		0.0483			-0.00977	
		(0.0386)			(0.0446)	
Glamour Firm			0.0767***		0.0778***	0.0749***
			(0.0250)		(0.0245)	(0.0246)
Challenged				0.250***	0.278***	0.282***
				(0.0727)	(0.0743)	(0.0740)
US or UK Target						0.0532
						(0.0628)
Constant	3.265***	3.235***	2.773***	3.235***	2.694***	2.769***
	(0.3400)	(0.3440)	(0.4110)	(0.3270)	(0.4050)	(0.4110)
Number of Observations	1863	1855	1300	1863	1292	1300
Adjusted R-Squared	0.0773	0.0774	0.0931	0.0835	0.0994	0.1002
AIC	4498.6	4482.1	3111.0	4487.0	3087.4	3102.7
F-Statistic	4.7730	4.6460	4.0890	5.0360	4.1180	4.1720
Degrees of Freedom	1825	1815	1261	1824	1250	1259
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses

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

(1) Investment Environment does not include Common Law dummy variable in its composition; however, it is included as a separate control variable

Table 8: OLS Regression of Common Law Dummy Variable on Merger Premiums (Four Weeks Prior to Announcement)

This table presents the results of an additional inquiry into the relation between the common law dummy variable and cross-border M&A premiums. To get a better understanding of this relation, we run a similar regression, however we include only the common law dummy variable and exclude the investment environment index.

	Premium Four Weeks Prior to Transaction Announcement					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Common Law	0.0996**	0.0845	0.0677	0.0966*	0.0557	0.00574
	(0.0502)	(0.0524)	(0.0574)	(0.0500)	(0.0607)	(0.0702)
Target Size	-0.0582***	-0.0593***	-0.0397***	-0.0615***	-0.0429***	-0.0473***
	(0.0116)	(0.0116)	(0.0141)	(0.0116)	(0.0140)	(0.0144)
Ownership	0.00750***	0.00762***	0.00842***	0.00733***	0.00851***	0.00792***
	(0.0017)	(0.0017)	(0.0020)	(0.0017)	(0.0020)	(0.0020)
GDP Growth		0.0401			0.0375	
		(0.0864)			(0.0975)	
Horizontal		0.045			-0.0124	
		(0.0387)			(0.0448)	
Glamour Firm			0.0771***		0.0775***	0.0737***
			(0.0251)		(0.0246)	(0.0247)
Challenged				0.253***	0.283***	0.292***
				(0.0727)	(0.0737)	(0.0739)
US or UK Target						0.105*
						(0.0596)
Constant	3.135***	3.124***	2.610***	3.107***	2.563***	2.663***
	(0.3760)	(0.3770)	(0.4600)	(0.3620)	(0.4480)	(0.4610)
Number of Observations	1864	1856	1301	1864	1293	1301
Adjusted R-Squared	0.0716	0.0711	0.0849	0.078	0.0909	0.0941
AIC	4511.7	4496.3	3124.4	4499.8	3101.2	3113.1
F-Statistic	4.7600	4.5590	4.0320	5.0250	4.0160	4.1720
Degrees of Freedom	1827	1817	1263	1826	1252	1261
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES

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

Table 9: OLS Regression of Investment Environment Index on Merger Premium in sub-sample (1999 - 2015) (Four Weeks Prior to Announcement)

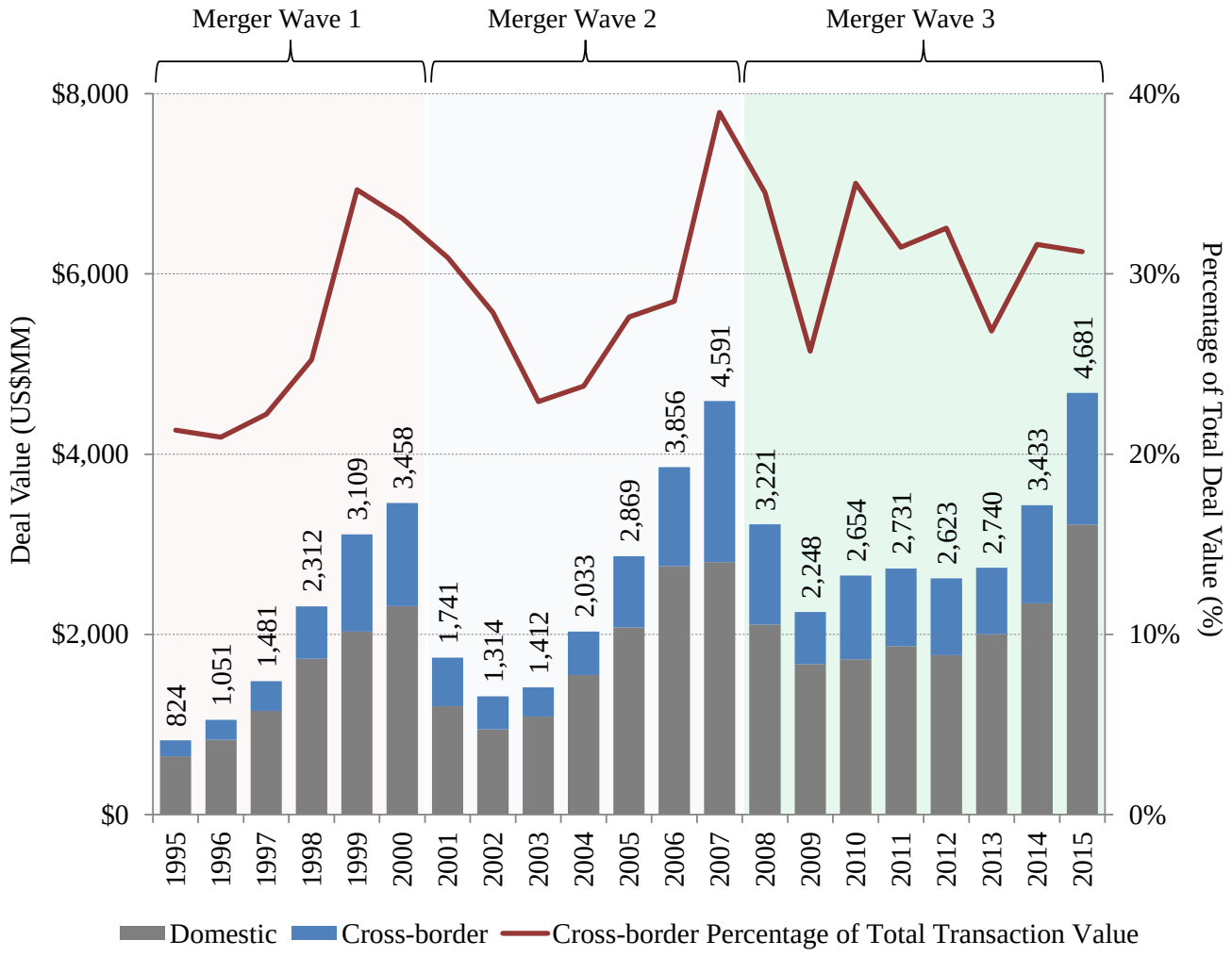
This table presents our regression results using a truncated sample to test the robustness of our findings against improving information quality and changing global market place dynamics.

	Premium Four Weeks Prior to Transaction Announcement					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Investment Environment	**0.0487****	**0.0504*****	**0.0486****	**0.0474****	**0.0480****	**0.0372***
	(0.0190)	**(0.0190)**	**(0.0202)**	**(0.0188)**	**(0.0201)**	**(0.0222)**
Target Size	-0.0690***	-0.0694***	-0.0517***	-0.0730***	-0.0545***	-0.0599***
	(0.0137)	(0.0136)	(0.0169)	(0.0136)	(0.0168)	(0.0176)
Ownership	0.00682***	0.00687***	0.00720***	0.00658***	0.00729***	0.00675***
	(0.0020)	(0.0020)	(0.0023)	(0.0020)	(0.0023)	(0.0023)
GDP Growth		0.0931			0.0857	
		(0.0848)			(0.0953)	
Horizontal		0.0429			-0.0377	
		(0.0455)			(0.0527)	
Glamour Firm			0.0752***		0.0777***	0.0723**
			(0.0289)		(0.0282)	(0.0284)
Challenged				0.317***	0.307***	0.314***
				(0.0837)	(0.0923)	(0.0913)
US or UK Target						0.0894
						(0.0624)
Constant	3.208***	3.154***	2.622***	3.156***	2.531***	2.640***
	(0.3940)	(0.4000)	(0.4540)	(0.3710)	(0.4440)	(0.4540)
Number of Observations	1404	1396	948	1404	940	948
Adjusted R-Squared	0.0817	0.0821	0.0962	0.0908	0.1038	0.1049
AIC	3459.1	3442.6	2307.4	3446.0	2285.5	2300.2
F-Statistic	5.0160	4.8360	4.1940	5.5100	4.2940	4.3670
Degrees of Freedom	1377	1367	920	1376	909	918
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES

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

Figure 1: Historical Domestic and Cross-border M&A Transactions[29]

This figure presents the historical domestic and cross-border M&A transactions between 1995 and 2015. We can clearly see three distinct M&A waves taking place over the last 20 years, and have segmented them based on colored backgrounds. It appears that throughout each wave, as overall M&A volume increases, the percentage of cross-border transactions increases as well. It also appears that when overall M&A activity is slow, the proportion of cross-border deals is also low.



[29] Source: dealogic M&A database; includes all M&A greater than US$10MM

Figure 2: Sample Premium Histogram

This figure presents the frequency of premium observations that fall into each class interval as well as the cumulative percentage of total observations. We can see that approximately 85% of the observations fall between 0% and 75%, and 38% of the observations fall between 25% and 50%.

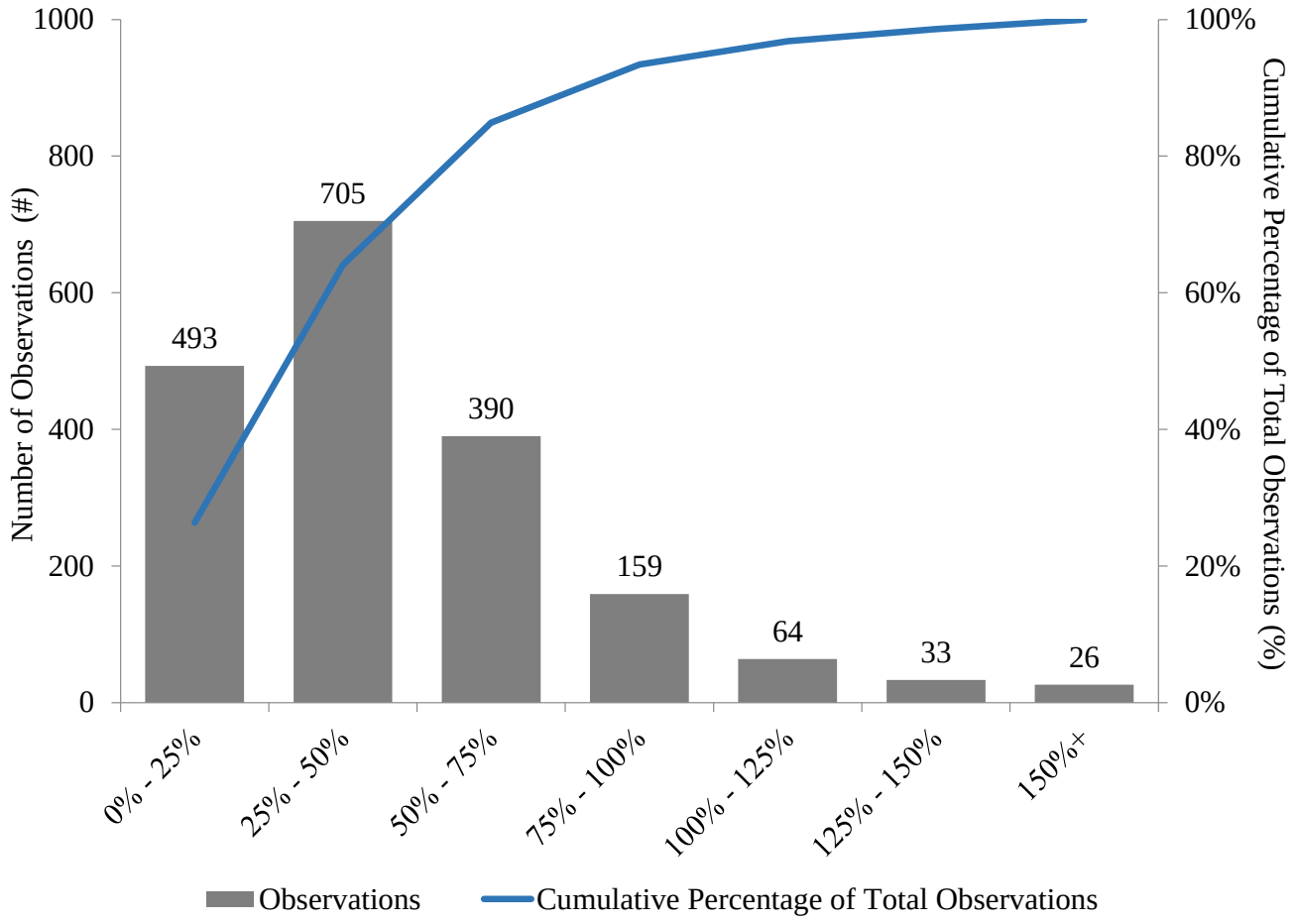


Figure 3: Average Annual Premium Paid in Sample

This figure highlights the average annual premium paid in our sample as well as the overall average for all transactions. Note that although the average annual premium fluctuates, there are not usually large deviations from the mean, which is ~47.1%.

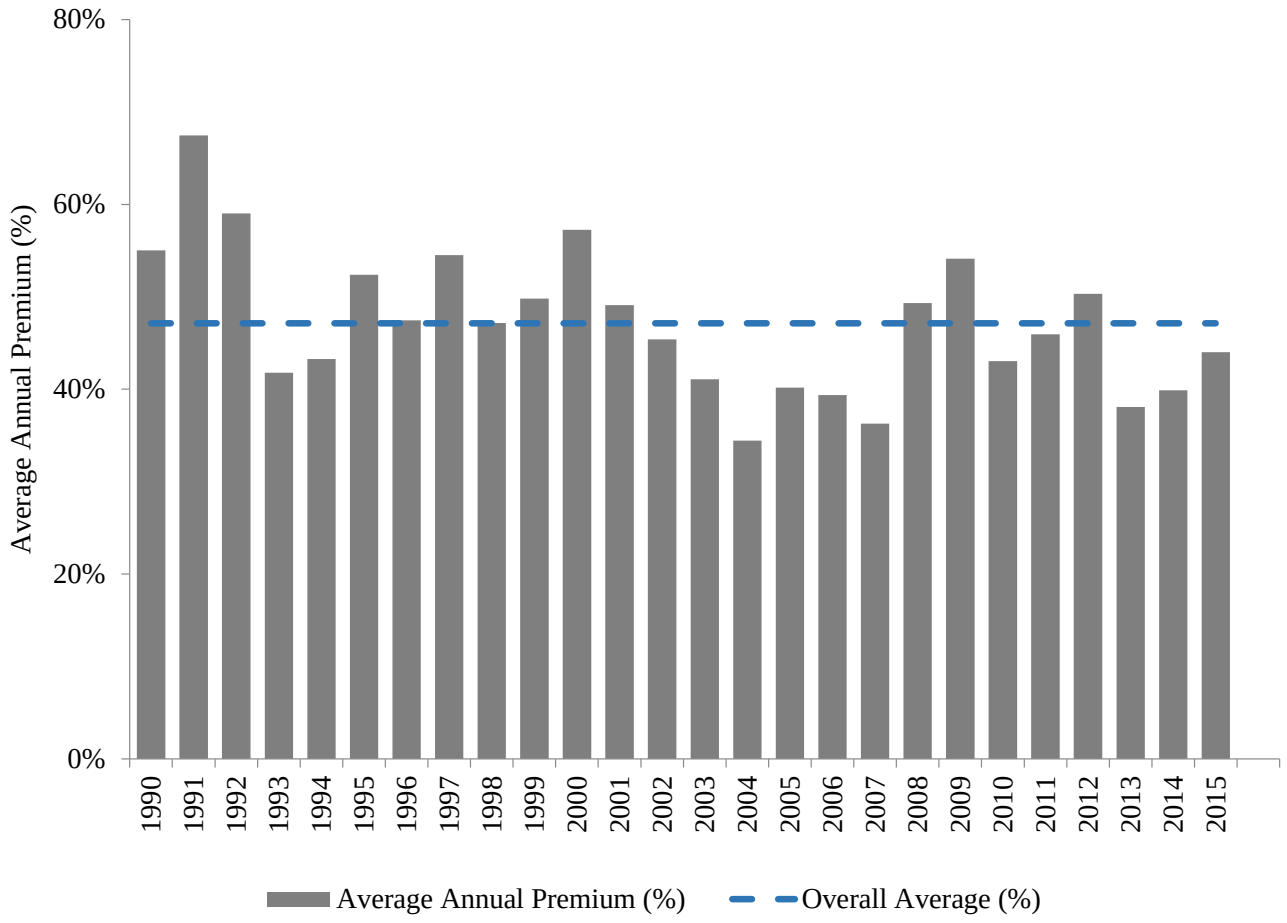


Figure 4: Three Year Rolling Average Annual Premium

This figure plots the three year rolling average annual premium, the average annual merger premium, and the average premium over all years. The purpose of this chart is to demonstrate the existing trends related to cross-border merger premiums. The trend appears to be that cross-border merger premiums are decreasing over time.

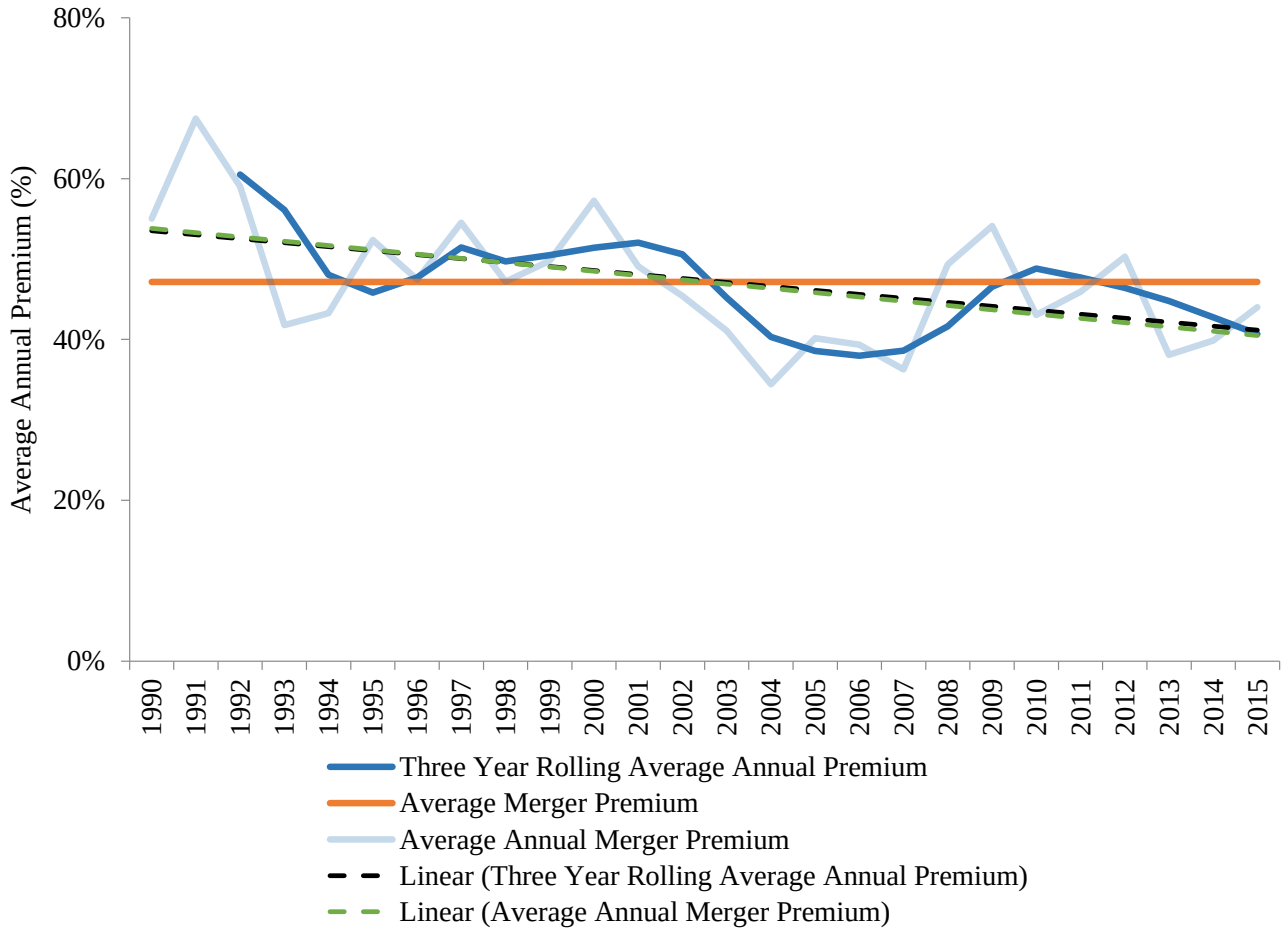


Figure 5: Annual Global Cross-Border M&A Value vs. Merger Premiums

This figure overlays the three year rolling average annual merger premium and the annual merger premium on the total annual cross-border M&A transaction value. We observe that, particularly in the most recent two waves, merger premiums tend to be inversely related to merger activity.

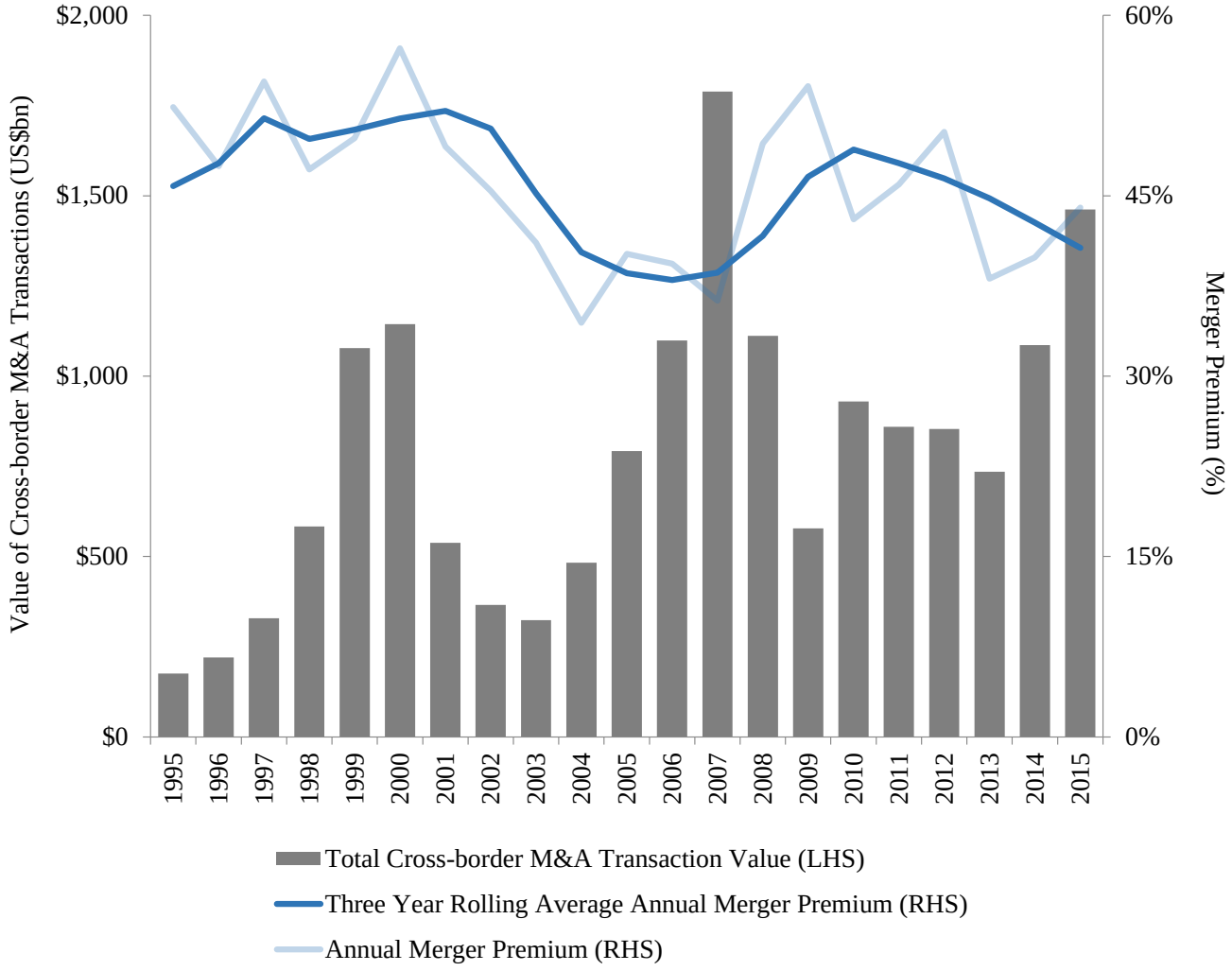


Figure 6: Premium Range and Measures of Central Tendency

This figure displays the annual premium range from low to high, as well as the median and the average annual premiums. There is significant volatility in the upper bound.