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RISK MITIGATION IN INTERNATIONAL MERGERS AND ACQUISITIONS

BY

YIMAI ZHANG

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctor of Philosophy

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY  
ROBINSON COLLEGE OF BUSINESS  
2019

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## ACCEPTANCE

This dissertation was prepared under the direction of Yimai Zhang Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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## ABSTRACT

### RISK MITIGATION OF INTERNATIONAL MERGERS AND ACQUISITIONS

BY

YIMAI ZHANG

04/15/2019

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Major Academic Unit: Marketing and International Business

Scholars have extensively studied the return of international mergers and acquisitions (M&As). Yet, we know little about the risk or failure of international M&As. At the pre-completion stage, around 20 percent of M&As get withdrawn, and risk, comparing to return, is a better indicator of deal failure. My dissertation essay one investigates the interplay effects of post-acquisition risk factors while my dissertation essay two examines the withdrawal of international deals through the impact of traditional institutional development and contemporary behavioral indicators at country level. Using asset pricing to measure shifts in risk and a large sample of international acquisitions by US firms during 2000-2014, essay one finds that acquirers can reduce their risk by trading internal and deal-level risk factors (information asymmetry and moral hazard) off against external and country-level risk factors (“liability of foreignness” and “double-layered acculturation”). Building on institutional theory and information asymmetry argument, essay two applies the concept of operational risk as the contingency of country governance quality and the likelihood of deal withdrawal. Operational risk provides us a contemporary measure of organizational behavior under the various “rules of the game”. Using panel data method and a sample of 8,008 cross-border deals which includes 1,744 country pairs during 1996—2016, essay two finds that acquiring country’s governance quality decreases the likelihood of deal withdrawal, and the risk mitigating effect is even stronger when the selling country has a strong governance mechanism as well, or when the acquiring country has high operational risk, or when the selling country has lower operational risk.

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## INTRODUCTION TO DISSERTATION ESSAYS

### **Motivation of the Dissertation Essays**

The market of international mergers and acquisitions (M&As) has been particularly active in recent decades. Scholars from various fields such as finance, accounting, management, and international business have studied the acquisition behavior of multinational enterprises (MNEs) extensively (see review studies Haleblan et al., 2009; Martynova & Renneboog, 2008; Shimizu et al., 2004; Tuch & O'Sullivan, 2007). However, prior studies have heavily focused on the post-acquisition return (such as return on equity, abnormal return, and integration capabilities etc.) rather than the post-acquisition risk or failure even though the failure rate of international M&As ranges between 45% and 67% (Mukherji, Dibrell, & Francis, 2013). To better understand the high failure rate, examining the post-acquisition risk or failure directly is essential (Lee & Caves, 1998; Park & Russo, 1996).

Among the extant research on cross-border M&As, a few studies stand out for probing the risk dimension of M&As (Chari & Chang, 2009; Reuer, Shenkar, & Ragozzino, 2004). Building their significant development in exploiting one source of risk as performance-contingent payout (i.e., stock payment or earnouts) or share of equity sought, Essay I addresses risk more holistically and allow the risk factors to complementarily interplay with each other as recommended by integrated risk management perspective (Miller, 1992).

The failure of M&As occurs either in the pre-completion stage or after the completion. Studies have shown that around 20% of the M&A announcements end up being withdrawn before completion (Bates & Lemmon, 2003). Deal withdrawal or deal abandonment incurs a large amount of costs including upfront costs in target selection and

professional services (Bainbridge, 1990), costs of revealing private information (Officer, 2003), opportunity costs (Bainbridge, 1990), the cost of breaching the contract (e.g., termination fees) and reputational losses (He & Zhang, 2018). Despite of the substantial cost, many firms still abandon their initiated deal, and we know little about the reasons behind the phenomenon. Essay II examines the impact of a traditional country-level factor—institutional environment, and one contemporary country-level factor—operational risk, on the likelihood of international deal withdrawal.

### **Significance of Essay I**

International M&A research concludes that the key risk factors are information asymmetry, moral hazard, and country-level uncertainties such as the “liability of foreignness” and “double-layered acculturation” (Barkema, Bell, & Pennings, 1996; Eden & Miller, 2004). To understand the behaviour of cross-border M&A risk and to assess the efficacy of mitigation channels, we exploit the complementary and competing effects of these risk factors through their indicators: industry relatedness, cultural distance, and institutional distance. Using a sample of 1,874 international acquisitions by US firms from 2000 to 2014, we find our results support our theoretical proposition: strategic international risk, examined in the context of cross-border M&As in our study, is subject to an array of simultaneous trade-offs among the risks of adverse selection, moral hazard, and target-country distance. Our study provides three contributions.

First, Essay I bridges a gap in the international business (IB) literature on risk as the performance outcome; while the literature is rich with theory and empirical evidence on the outcomes of internationalization strategies, it is disproportionately focused on returns. However, returns are just one facet of performance, which cannot illustrate the full outcomes of internationalization. Along with the attainment of economic rents, managing risks is a

primary objective of firms operating internationally (Ghoshal, 1987; Miller, 1992). By studying risk as the performance outcome, we open a debate to investigate, quantify, and mitigate strategic international risks. Second, we contribute to the theory of integrated risk management (Miller, 1992). The dominant theories explaining the cross-border M&A phenomenon are transaction cost economics (TCE), ownership-location-internalization (OLI), and the resource-based view (RBV). While these theories build a strong foundation within this body of literature, Miller's framework provides a unique perspective on theorizing about cross-border M&A risk. Our study extends his integrated risk framework in the specific context of cross-border M&As. We posit that acquirers can leverage internal factors from deal-level characteristics to offset external risks coming from country-level factors. Third, we contribute to the cross-border M&A literature by providing a measure of risk. Despite the extensive research on cross-border M&As, we are not close to explaining the high failure rates as we tend to overlook risk (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). Scholars have recently focused on examining abnormal returns as the performance measure. Abnormal returns estimate the difference between actual and expected returns, which assumes risk to be time-invariant across pre- and post-announcement periods. Thus, they fail to account for possible shifts in the volatility – hence the risk – of stock returns. Instead, we measure the acquirers' post-acquisition shift in systematic risk from the difference between pre- and post-announcement periods, using the Carhart Four-Factor Model (Lubatkin & O'Neill, 1987).

### **Significance of Essay II**

Information asymmetry is the main culprit of deal abandonment. A deal withdrawal usually occurs because of the release of unexpected information after the announcement (Davidson III, Rosentein, & Sundaram, 2002; Hotchkiss, Qian, & Song, 2005). The reasons for the

revealing of new information could be (1) there is a misunderstanding of the information shared; (2) unanticipated regulatory changes in the target's country; (3) the acquirer made mistakes or did not evaluate the target's information as fully and precisely as the acquirer should; (4) the target firm intentionally hid or fabricated its information before the announcement in order to sell or sell at a high premium (Akerlof, 1970; Anagnostopoulou & Tsekrekos, 2015; Reuer, 2005). While institutional theory provides us the environmental explanations on reason one and two because organizations are "purposive entities designed by their creators to maximize wealth, income, or other objectives defined by the opportunities afforded by the institutional structure of the society" (North, 1990: 73), operational risk helps us dive into the behavioral aspects of information asymmetry regarding the imperfect information on what the target firm has done in the past (e.g., reason four).

Using a sample of 8,008 cross-border M&As which includes 1,744 country pairs (target nation and acquirer nation) during 1996 to 2016, we find that the better the acquiring (i.e., acquirer's) country's governance quality is, the lower the likelihood of the deal abandonment. Furthermore, when the selling (i.e., target's) country's governance quality is also high, the acquiring country's governance quality decreases even more of the likelihood of the deal abandonment. Additionally, the level of acquiring or selling country's operational risk has different moderating effect on the acquirer governance as well. When the acquirer is from a country with strong governance mechanisms as well as high operational risk, the acquirer is even less likely to abandon the deal with the foreign target. However, in comparison, when the target is from a country with high operational risk, the acquiring country's governance quality would not have an as strong effect on mitigating the deal closing risk.

One major contribution of Essay II is that we extend the scope and effect of institutional theory in firm internationalization strategy by cooperating the role of another

contemporary country-level factor, operational risk. Institutional theory has provided us the regulatory explanations through countries' regulative, normative, and cognitive pillars in international business activities (North 1990; Scott, 1995). Institutional distance, as the key driver of "liability of foreignness" (Eden & Miller, 2004), offers rich and meaningful insights on the performance and strategy making of firms' internationalization. Although organizations are assumed to modify "in the direction of increasing compatibility with environmental characteristics" (DiMaggio & Powell, 1983, p.149), employees are subjective and "act on their own perceptions and act in unpredictable as well as predictable ways" (Astley & Van De Ven, 1983). By applying the concept of operational risk, we combine the "rules of the game" and organizational actions, enriching the institutional theory with a behavioral aspect or a measured outcome of enforcement. Operational risk is a contemporary measure of organizational behavior with country-level variations, which further helps the institutional theory to identify the co-evolutionary and dynamic effect between MNEs activities and governance development.

**ESSAY I:**

**MITIGATING POST-ACQUISITION RISK:**

**THE INTERPLAY OF CROSS-BORDER UNCERTAINTIES**

**ABSTRACT**

Do international acquisitions increase acquirers' risk? If so, can cross-border uncertainties interact and offset such risk? The perspective of integrated risk management suggests international acquirers could mitigate their overall risk through the interplay of various levels of uncertainties. Using asset pricing to measure shifts in risk and a large sample of international acquisitions by US firms during 2000-2014, we find that acquirers can reduce their risk by trading internal and deal-level risk factors (information asymmetry and moral hazard) off against external and country-level risk factors ("liability of foreignness" and "double-layered acculturation").

**Keywords:** risk; mergers and acquisitions; international; cultural distance; institutional distance

## INTRODUCTION

Despite the substantial uncertainty surrounding the global marketplace, the market of international mergers and acquisitions (M&As) has been particularly active. Due to the exciting and often contentious nature of M&A activities, scholars from various disciplines have studied the acquisition behaviour of multinational enterprises (MNEs) extensively. Even with the wealth of research, international M&As have been reported to present very high failure rates, often ranging between 45% and 67% (Mukherji, Dibrell, & Francis, 2013). While risk is a well-defined predictor of failure, most studies place a disproportionate focus on the return side of performance (Lee & Caves, 1998; Park & Russo, 1996). To better understand the high failure rate of M&As, the examination of M&A risk is essential. Thus, in this article, we investigate whether cross-border M&As involve increased risk for the acquirer and if so what international acquirers should do to offset the increased risk.

The theoretical foundation of our paper lies in Miller's (1992) perspective of integrated risk management, suggesting international acquirers should utilize simultaneous trade-offs among various levels of uncertainties for strategic international risk management. In other words, the various uncertainties encountered by an MNE can interplay and reduce the firm's overall risk. Building on Miller's (1992) work, a small number of scholars find that MNEs can actually utilize integrated risk management to reduce risk across varied contexts. Shrader, Oviatt, and McDougall (2000) show how new ventures can manage their risk by trading three factors off against each other: foreign location, entry mode, and the proportion of revenue exposed to certain locations. Das and Teng (1998) recommend understanding the behaviour of strategic alliances by integrating resource and risk dimensions. In supply chain risk management, it is crucial to acknowledge the interacting effects of supply risks, demand risks, and operational risks (Manuj & Mentzer, 2008). In line with this important body of

literature, our study employs the integrated risk management perspective in the context of cross-border M&As.

Among the extant research on cross-border M&As, the studies of Chari and Chang (2009) and Reuer, Shenkar, and Ragozzino (2004) stand out for probing the risk dimension of M&As. Building on their significant developments, our study offers two extensions: First, while these studies focus on a single source of risk, we address risk more holistically. Specifically, Reuer et al. (2004) examine risk mitigation by performance-contingent payout (i.e., stock payment or earnouts). Since contingent payout is a payment method that depends on the success of the deal and the performance of the target, it addresses the information asymmetry problem and transfers the acquirer's downside risk to the target. Nonetheless, information asymmetry, leading to the risk of adverse selection, is only one source of risk in cross-border M&As. Chari and Chang (2009), on the other hand, explore the determinants of share of equity. While share of equity does have implications for resource commitment, risk, returns, and control, it is not an explicit measure of risk. Expanding on these two studies, we address the risk of cross-border M&As via a more direct and precise approach. Second, the above studies directly examine the determinants or risk factors, which shows that they assume the factors are competing rather than complementary in nature. In contrast, we emphasize the complementary interplay effect among the sources of risk, and allow the risk factors to interact with each other.

International M&A research concludes that the key risk factors are information asymmetry, moral hazard, and country-level uncertainties such as the "liability of foreignness" and "double-layered acculturation" (Barkema, Bell, & Pennings, 1996; Eden & Miller, 2004). The "liability of foreignness" stresses the social cost of doing business abroad, which results from the unfamiliarity that foreign firms face (Eden & Miller, 2004). A foreign firm engaged in M&As also deals with the issue of double-layered acculturation, which refers

to the cultural distances at both the country and corporate level (Barkema et al., 1996). To understand the behaviour of cross-border M&A risk and to assess the efficacy of mitigation channels, we exploit the complementary and competing effects of these risk factors through their indicators: industry relatedness, cultural distance, and institutional distance. Industry relatedness indicates the organizational similarity in terms of business traits and goals, which implies the degree of information asymmetry and moral hazard problems. Institutional distance is the key driver behind the “liability of foreignness” (Eden & Miller, 2004). Finally, cultural distance at the country level measures the outer layer of “double-layered acculturation”.

Using a sample of 1,874 international acquisitions by US firms from 2000 to 2014, we find significant moderating effects among industry relatedness, cultural distance, and institutional distance on acquirers’ post-acquisition risk. For instance, while industry relatedness on its own increases post-acquisition systematic risk, the presence of cultural distance can (at least partially) offset such risk effects. In other words, if a firm acquires a related target in a culturally distant country, post-takeover risk decreases. If, on the other hand, the target is in a culturally similar country, the acquirer experiences an even more pronounced increase in risk. Therefore, “double-layered acculturation” can act as a risk mitigation scenario for cross-border acquirers. Furthermore, the increased risk from industry relatedness can also be mitigated by institutional distance, especially when the related targets are from upstream institutions (i.e., countries with better institutional development than the US). Lastly, we find that acquirers’ risk declines when the targets are from upstream countries with both culturally and institutionally distant environments. Our results therefore support our theoretical proposition: strategic international risk, examined in the context of cross-border M&As in our study, is subject to an array of simultaneous trade-offs among the risks of adverse selection, moral hazard, and target-country distance.

Our study provides three contributions. First, we bridge a gap in the international business (IB) literature on risk as the performance outcome; while the literature is rich with theory and empirical evidence on the outcomes of internationalization strategies, it is disproportionately focused on returns. However, returns are just one facet of performance, which cannot illustrate the full outcomes of internationalization. Along with the attainment of economic rents, managing risks is a primary objective of firms operating internationally (Ghoshal, 1987; Miller, 1992). By studying risk as the performance outcome, we open a debate to investigate, quantify, and mitigate strategic international risks. Second, we contribute to the theory of integrated risk management (Miller, 1992). The dominant theories explaining the cross-border M&A phenomenon are transaction cost economics (TCE), ownership-location-internalization (OLI), and the resource-based view (RBV). While these theories build a strong foundation within this body of literature, Miller's framework provides a unique perspective on theorizing about cross-border M&A risk. Our study extends his integrated risk framework in the specific context of cross-border M&As. We posit that acquirers can leverage internal factors from deal-level characteristics to offset external risks coming from country-level factors. Third, we contribute to the cross-border M&A literature by providing a measure of risk. Despite the extensive research on cross-border M&As, we are not close to explaining the high failure rates as we tend to overlook risk (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). Scholars have recently focused on examining abnormal returns as the performance measure. Abnormal returns estimate the difference between actual and expected returns, which assumes risk to be time-invariant across pre- and post-announcement periods. Thus, they fail to account for possible shifts in the volatility – hence the risk – of stock returns. Instead, we measure the acquirers' post-acquisition shift in systematic risk from the difference between pre- and post-announcement periods, using the Carhart Four-Factor Model (Lubatkin & O'Neill, 1987).

The rest of the paper is organized as follows: in the next section, we discuss the theoretical framework and put forward testable hypotheses. Then, we present our empirical data and methodology. The fourth section illustrates the results and the fifth provides robustness checks for our study. The last section concludes.

## **THEORETICAL BACKGROUND**

As one of the primary objectives of MNEs, risk management is a critical area in need of contemporary theorization and quantitative mitigation (Ghoshal, 1987; Lee & Caves, 1998). In the past, scholars and risk managers have treated risk purely in terms of one particular type of uncertainty, excluding other existing ones. With the development of globalization and technology, the risk manager is increasingly becoming involved in managing a broader spectrum of risks facing the firm (Colquitt, Hoyt, & Lee, 1999). In the context of IB, MNEs face various and numerous levels of uncertainties, ranging from the firm level to the general environmental level, which makes IB inherently risky. The complexity of uncertainties for MNEs drove the development of integrated risk management especially for IB (Miller, 1992, 1998). Specifically, Miller (1992) proposed a framework with multiple dimensions of risks for international businesses. These multiple dimensions of risks are suggested to be simultaneously determined, or interrelated, rather than operating independently of each other. Truly, MNEs' financial (or foreign exchange) risk is highly related to their strategic risk. The failure to hedge a firm's exposure to foreign exchange risk would risk the success or performance of a firm's strategies.

Miller's (1992) perspective of interdependencies between risk factors formulates his insight: managing those risks often involves trade-offs. A trade-off between exposures to various uncertainties means that a reduction of one uncertainty may result in increased exposure to another uncertainty (Miller, 1992). Thus, MNEs can manage multiple IB risks by

trading one risk off against another to keep the overall risk lower than it would be without such trade-offs (Shrader et al., 2000). As mentioned before, IB scholars have theoretically developed and empirically tested the theory of integrated risk management in the context of new ventures, supply chain risk management, and strategic alliances. This paper further employs the theory in the context of international M&As, considering the various levels of risk factors acquirers face.

Information asymmetry between the acquirer and the target is the primary risk factor in M&As, existing when the bidder lacks precise or sufficient information about the target (Chari & Chang, 2009; Reuer et al., 2004). When asymmetrical information prevails between two companies, the acquirer faces the risk of adverse selection (i.e., overpayment) due to an inaccurate evaluation of the target's value or excessive transaction costs during the negotiation phase. As Mukherji et al. (2013) point out, information asymmetry is a major source of overbidding risk, particularly due to the misevaluation of intangible assets. In addition to adverse selection as the *ex-ante* valuation uncertainty (i.e., risk prior to deal completion), moral hazard problems (Alchian & Woodward, 1988; Holmstrom, 1982) are also likely to occur both before and after deal completion. On the one hand, to the extent that CEOs influence board decisions on compensation, as supported by the “managerial power” view, acquisitions can be used by CEOs as justification for additional compensation (Grinstein & Hribar, 2004). Since compensation contracts are often not designed perfectly, managers may also be allowed to extract rents that are linked to the completion or size of a deal, rather than its performance<sup>1</sup>. On the other hand, following deal completion, information asymmetry between the owner and the manager – as well as that between the managers of the bidder and the target – may continue to exist. The acquirer is therefore exposed to further

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<sup>1</sup> Grinstein and Hribar (2004) report that, in 4 out of 10 deals in their sample, deal completion was cited as a criterion for the provision bonuses, averaging over \$1.4 million on top of any other compensation.

uncertainty and moral hazard problems, factors often cited as potential causes of integration failure (Chi, 1994).

The risk of adverse selection and moral hazard problems are common factors in M&As, and are internal or endogenous uncertainties for acquirers. Following Gatignon and Anderson (1988), we consider risk factors that are limited to within organizations (i.e., the acquirer and the target) as internal uncertainty. These internal risk factors are exacerbated when it comes to cross-border M&As (Gatignon & Anderson, 1988). In an international context, internal risk factors (adverse selection and moral hazard problems) are amplified by external influences such as the “liability of foreignness” and “double-layered acculturation” (Aybar & Ficici, 2009; Barkema et al., 1996; Eden & Miller, 2004). Being exposed to “double-layered acculturation”, acquirers not only encounter the target’s different organizational culture but also often compete with its different national culture. These external risks result from differences in national culture, institutional environments, business practices, and customer behaviors, which heighten information asymmetry and complexity.

Studies in international economics and finance have approached the issue from the theoretical and empirical lens of “familiarity” or cultural affinity (Guiso, Sapienza, & Zingales, 2009). In general, investors appear reluctant to hold the securities of firms they are not familiar with, a principle which also explains “home bias” in investment portfolios, overseas listing decisions etc. As Chan, Covrig, and Ng (2005) also reveal, investors may even present foreign bias, by overweighting their portfolios towards certain foreign markets, depending on the level of economic development, market capitalization, transaction costs, or any factors reducing information asymmetry. The same norm has been found to apply in overseas-listing decisions, with companies showing preferences for foreign markets with geographical proximity or other familiar characteristics, explaining the propensity of US issuers to cross-list in Canada, the United Kingdom, and certain European countries. In the

domain of cross-border M&As – where cross-cultural interactions between acquirers and targets are expected to be more intense – Siegel, Licht, and Schwartz (2011) document that the distance between origin and destination countries regarding critical informal institutions, such as cultural egalitarianism, not only explains the home bias in portfolio holdings and acquisition volume, but also the value destruction in cross-border M&As. Furthermore, Ahern, Daminelli, and Fracassi's (2015) recent work gives further empirical support to the view that distance in cultural values negatively influences merger activity and acquirer returns. The above theoretical and empirical lens from international finance corroborates the IB paradigm that MNEs in general, and international acquirers in particular, face unfavorable odds when engaging in cross-border strategic investments.

However, in cross-border acquisitions, internal risk factors (adverse selection and moral hazard problems) and external uncertainties (“liability of foreignness” and “double-layered acculturation”) are complementary and overlapping (Chari & Chang, 2009; Reuer & Koza, 2000). Moreover, these internal (firm-level) and external (country-level) uncertainties are interrelated and can thus be traded off against alternative firm strategies (Miller, 1992). In other words, according to Miller's (1992) integrated risk management perspective, when a firm's exposure to one level of uncertainty increases, its exposure to another level of uncertainty decreases, and the firm can manage its risk by adjusting its strategy through simultaneous trade-offs among the levels of uncertainties. To be more specific to our context, international acquirers can mitigate their risk by simultaneously trading the external uncertainties (“liability of foreignness” and “double-layered acculturation”) off against internal uncertainties (adverse selection and moral hazard problems). From earlier studies, acquirers could passively mitigate their risk by controlling the equity sought or the payment method. In our study, we integrate the internal with the external risk factors, allowing the

acquirers to mitigate their risk in an active fashion. We utilize such indicators of uncertainties as industry relatedness, institutional distance, and cultural distance.

## **HYPOTHESIS DEVELOPMENT**

### **Industry Relatedness**

Synergy theory argues that related acquisitions – where acquirers and targets share strategic interdependence, redeploy resources, and combine at an operating level – will produce benefits (Capron, Dussauge, & Mitchell, 1998). In related acquisitions, it is easier for the acquirer to evaluate the target's business and value because of the similarities, reducing the degree of information asymmetry and subsequent moral hazard problems. Thus, the acquirer is – at least in theory – subject to a lower risk of adverse selection (Chari & Chang, 2009; Reuer et al., 2004). However, many acquisitions that are potentially synergistic fail to create value or even ultimately lead to divestitures (Bergh, 1997; Davidson III, Rosenstein, & Sundaram, 2002). In order to benefit from operational synergies, related acquisitions require the bidders to invest heavily in implementation (or integration) after the deal. These implementation costs are higher in a cross-border context, due to the distance between the acquirer and the target in terms of culture, geography, and institutions (Chakrabarti & Mitchell, 2016). In the meantime, the high implementation costs have a larger impact in an international context for related acquisitions than unrelated ones (Chakrabarti & Mitchell, 2016).

Furthermore, the acquisition of related targets tends to drive acquirers' confidence and hubris up because the acquirer feels they know enough about the target's business (Lubatkin & O'Neill, 1987). Assuming there is sufficient and symmetric information about the target's business, an acquirer is more likely to underestimate the implementation costs and consolidation efforts. Integration costs often exceed the expected value of the synergies, thus

contributing to value destruction and the risk of integration failure. By underestimating costs and under-resourcing consolidation efforts, acquirers are prone to neglect important administrative functions (Kitching, 1967). Therefore, the more related a target is, the higher the risk of administrative business and integration failure is.

Singh and Montgomery (1987) argue that related acquisitions provide the acquirer with greater economies of scale and scope, while unrelated ones are likely to achieve financial and administrative synergies. Thus, unrelated cross-border acquisitions have more potential to lower the acquirer's cost of capital (Chatterjee, 1986). As a lower cost of capital reduces the required rate of return on investment, it allows for further investment opportunities, thus bringing higher value and lower systematic risk for the firm, all other things being equal (Lubatkin & O'Neill, 1987). In addition, unrelated overseas acquisitions are known to be more "satisfactory vehicles" for risk reduction than domestic ones, because of the diversification into international markets (Hisey & Caves, 1985; Seth, Song, & Pettit, 2002). We therefore expect that related cross-border M&As will be accompanied by higher risk than unrelated ones *ceteris paribus*.

*H1: Industry relatedness between the acquirer and the target increases the acquirer's risk in cross-border M&As.*

### **Cultural Distance**

The research on the impact of cultural distance on M&A outcomes has been inconclusive and contradictory (Björkman, Stahl, & Vaara, 2007; Chakrabarti, Gupta-Mukherjee, & Jayaraman, 2009). On the one hand, cultural distance at the country level may provide strengths and advantages to the acquirer, assuming they have pre-deal awareness of the cultural difference and are well-prepared for the challenges it will pose (Chakrabarti et al.,

2009). On the other hand, cultural distance is found to impede the integration and capability transfer because of so-called “double-layered acculturation” (Barkema et al., 1996), with one layer arising from difficulties at the organizational culture level and the other at the national culture level. Acquirer and target have to combine both levels of cultural differences. In addition, as Siegel et al. (2011) suggest, as cultural distance increases, target-firm stakeholders may become more difficult to deal with, subsidiary management becomes harder to monitor, and negotiations become more complex and costlier, ultimately giving rise to a risk of the deal being abandoned altogether. We therefore argue that “double-layered acculturation” can actually increase acquirer risk in cross-border M&As. The outer layer of country-level differences amplifies the risk generated by the inner layer of organization-level differences. Thus, we expect that cultural distance between the acquirer and the target at the country level will increase the acquirer’s risk in international M&As.

*H2: Cultural distance between the acquirer’s country and the target’s country increases the acquirer’s risk in cross-border M&As.*

### **Institutional Distance**

Country governance is defined as *the tradition and institutions by which authority is exercised* (Kaufmann, Kraay, & Mastruzzi, 2011). The difference in country governance (i.e., institutional distance) between the acquirer and the target is the key driver behind the “liability of foreignness” (Eden & Miller, 2004). Thus, institutional distance is a critical factor for cross-border M&A performance. Scholars have examined its influences on the acquirer’s abnormal returns (Chari, Ouimet, & Tesar, 2009; Ellis, Moeller, Schlingemann, & Stulz, 2017; Gubbi, Aulakh, Ray, Sarkar, & Chittoor, 2010), deal completion or abandonment (Dikova, Sahib, & Van Witteloostuijn, 2010; Zhou, Xie, & Wang, 2016), and target

premiums (Bris & Cabolis, 2008; Weitzel & Berns, 2006). Kwok and Reeb (2000), propose an upstream-downstream hypothesis, which states that MNEs going upstream (i.e., internationalizing into a more institutionally developed economy) experience a risk reduction, but those going downstream (i.e., internationalizing into a less institutionally developed economy) experience a risk increase. Upstream institutions provide more economic and political stability, which decreases the acquirer's currency and governance risk. Also, in an upstream environment, assets and investments are easier for the acquirer to expropriate and exploit, which decreases its financial risk.

More recent work supports country governance being portable in M&As (Bris, Brisley, & Cabolis, 2008; Chari et al., 2009; Ellis, Moeller, Schlingemann, & Stulz, 2017), such that MNEs acquiring downstream targets can transfer their relatively better governance, thus facilitating resource redeployment, exploration, and diversification of their strategic assets. By sharing and transferring, the acquirer can improve the target's value by controlling its corporate governance practices in its accounting, legal regulations, operational process etc. Therefore, acquiring downstream targets may ultimately decrease acquirers' risk.

Drawing from Kwok and Reeb (2000) above, but also acknowledging the portability of country governance, we therefore posit that:

*H3: Institutional distance between the acquirer's country and a downstream target's country decreases the acquirer's risk in cross-border M&As.*

*H4: Institutional distance between the acquirer's country and an upstream target's country decreases the acquirer's risk in cross-border M&As.*

## **Industry Relatedness and Cultural Distance**

With increasing M&A activities, international acquirers have prior awareness of the cultural distance of a target's nation and its potential influences on negotiation and integration (Chakrabarti et al., 2009). The awareness of information asymmetry due to cultural distance outstrips neglect or overconfidence coming from industry relatedness. Acquirers will likely engage more thoroughly with *ex-ante* M&A procedures such as screening, selection, evaluation, due diligence, and contracting. In other words, when acquiring a culturally distant target, the bidder will assume similarly high levels of information asymmetry for related as for unrelated targets. In the same vein, during the *ex-post* integration phase, acquirers – conscious of the cultural differences – will be better prepared for potential obstacles. This preparation will make the acquirers less likely to underestimate the implementation costs and potential hurdles in integrations with related targets when the firms are culturally disparate (Chakrabarti et al., 2009). Therefore, while acquirers may underestimate integration and consolidation costs in related acquisitions (Lubatkin & O'Neill, 1987), the presence of high cultural distance will incite more rigorous *ex-ante* and *ex-post* M&A procedures, which will offset any overlooked aspects due to industry relatedness. Therefore, we propose that cultural distance will facilitate the operational synergy stemming from industry relatedness, and thus the interaction between cultural distance and industry relatedness will reduce the acquirer's risk in cross-border M&As. In other words:

*H5: The higher the cultural distance between the acquirer's and the target's nations, the lower is the effect of industry relatedness on the acquirer's shift in risk.*

## **Industry Relatedness and Institutional Distance**

In the context of cross-border M&As, as we argued above, the risks of moral hazard and information asymmetry are heightened, especially when the acquisition target is in a related industry. However, high institutional distance may allow the acquirer to experience a risk reduction either by allowing more autonomy to the target, or simply by taking advantage of the reduced sensitivity to market shocks.

The more related a target is to the bidder, the more likely corporate managers are to reinforce consolidation efforts, rather than execute autonomous management within the subsidiary (Lubatkin & O'Neill, 1987). This can increase integration efforts and lead to losses associated with deal implementation risk (i.e. employee turnover, litigation, etc.). In fact, Salomon and Wu (2012, p. 344) suggest that “Foreign firms from more institutionally distant home countries are more likely to adopt local isomorphism strategies to acquire legitimacy and mitigate the liability of foreignness.” As such – particularly for related deals – in cases of high institutional distance acquirers are more likely to allow organizational autonomy to the target in order to better adopt the host country’s institutions and norms. This will in turn not only better help acquirers to reduce risks associated with legitimacy costs, but also ultimately facilitate integration and mitigate the implementation uncertainties described above. In other words, while for domestic deals quick and effective integration can shield acquirers from risks associated with diseconomies of scale, in the presence of institutional distance bidders will not rush to impose an integration mandate unless it is reasonably safe and prudent to do so.

In addition, despite the stylized fact in international finance that countries exhibit high stock market integration or interdependence (Forbes & Rigobon, 2002; Lee, 2006), institutional distance has been found to reduce market co-movement. Specifically, across global markets, the development of similar principal institutions (e.g., political and legal

systems) increases the co-movement of stock returns, while institutional distance decreases it (Tavares, 2009). Therefore, it can be argued that institutional distance, by reducing market interdependence between the acquirer and target countries, can also act as a “cushion” to industry-specific shocks (i.e. from regulatory shifts, supply and labor shortages, etc), thereby mitigating the acquirer’s sensitivity to home-host market uncertainties.

Therefore, institutional distance can act as a risk mitigation device for related acquisitions from both downstream and upstream countries; however, since the magnitude of the effects for the downstream and upstream countries may differ, we make two distinct hypotheses:

*H6: The higher the institutional distance between the acquirer’s country and a downstream target’s country, the lower is the effect of industry relatedness on the acquirer’s shift in risk.*

*H7: The higher the institutional distance between the acquirer’s country and an upstream target’s country, the lower is the effect of industry relatedness on the acquirer’s shift in risk.*

### **Cultural Distance and Institutional Distance**

Culture is embedded in organizational structures and management styles (Schneider, 1990). Thus, with awareness of potential integration problems, the acquirer is expected to possess a diverse set of routines and repertoires as a result of acquiring culturally distant targets (Morosini, Shane, & Singh, 1998). Such diversity increases the acquirer’s innovation and thus competitiveness in the long run. Nevertheless, since cultural values guide managers’ decision-making towards risk and return (Li, Griffin, Yue, & Zhao, 2013; March & Shapira, 1987), diversity in managerial risk-taking and opportunity recognition might also be affected.

What may be perceived as risk by managers in the acquirer's country might be treated as opportunity in the target's.

With culturally different targets, acquirers are hence able to diversify their portfolio of managerial risk-taking. After all, subsidiaries and headquarters enjoy different standards and levels of risk and opportunity assessment, which drives diverse investment opportunities and uncorrelated operating earnings. Thus, by acquiring culturally distant targets, acquirers will build stronger internal resilience against market uncertainty. In addition, like institutional distance, cultural distance has been reported to result in lower levels of market co-movement (Lucey & Zhang, 2010). Thus, with both institutional distance and cultural distance, acquirers can not only strengthen their internal resilience, but also reduce their sensitivity to market-level shocks, ultimately reducing their combined systematic risk.

Following Kwok and Reeb (2000), acquirers of upstream targets (where the acquirer's institutional environment is less developed than the target's) have a better ability to arbitrage markets and leverage their capabilities towards reducing risk. On the other hand, acquirers of downstream targets (acquirer's institutional environment is more developed than the target's) enjoy the portability of corporate governance and improve their targets' capabilities at resource exploitation, which also decreases their exposure to regulatory and environmental uncertainties. We therefore posit that, in the presence of high institutional distance (from either downstream or upstream markets), acquiring a culturally distant target will mitigate the acquirer's risk; however, as in *H3* and *H4* above, we appreciate that the effects of downstream and upstream distance may differ in magnitude, so we put forward two distinct hypotheses:

*H8: The higher the institutional distance between the acquirer's country and a downstream target's country, the lower is the effect of cultural distance on the acquirer's shift in risk.*

*H9: The higher the institutional distance between the acquirer's country and an upstream target's country, the lower is the effect of cultural distance on the acquirer's shift in risk.*

## **DATA AND METHODOLOGY**

### **The Sample of Cross-border M&As**

We collected data on US acquirers and foreign targets in completed deals from Thomson EIKON Deals (formerly Thomson One - SDC), combining it with archival accounting data from Compustat and share price data from CRSP. To include a merger in our sample, we employed a number of criteria in line with the majority of the relevant empirical studies. Our original sample included all completed deals during the period 2000-2014, where the acquirer was a US firm listed on one of the three main US exchanges (i.e. New York Stock Exchange; NASDAQ; AMEX) and the target was a non-US firm, either public or private. The size of the deal had to exceed \$1 million with a minimum of a 5% stake sought by the acquirer during the deal. To ensure that the voting and cash flow rights in the target company were transferred to the shareholders of the acquirer, acquisitions of associates and minority stakes were also excluded from the analysis, and the acquirer's stake in the target company after deal completion had to exceed 50%. Broadly, these baseline parameters ensured that only significant and representative takeover deals would be included in the sample, while the exchange of small (minority) stakes and any similar over-the-counter transactions would be excluded. In addition to the above, sufficient, reliable, and accurate data for a number of essential accounting variables had to be available from Compustat and CRSP. These

screening criteria and this procedure resulted in a sample of 1,893 cross-border deals for which we were able to collect data on all of the necessary variables.

### **Dependent Variable and Model Specification**

With respect to measuring cross-border M&A risk, Lee and Caves (1998) suggest three alternatives: the variance of profits, the variance of abnormal stock market returns, and the turnover of a foreign subsidiary through shutdown and divestiture. Based on detailed comparisons and high correlations among these three measures (Lee & Caves, 1998), we measure M&A risk by stock market volatility using Carhart's Four-Factor Model (1997).

In modern portfolio theory, risk comprises two main components, namely *systematic* risk, broadly defined as a firm's returns sensitivity to market returns, and *unsystematic* (or idiosyncratic) risk, which is the uncertainty specific to particular assets or firms. While unsystematic risk is inherent to a specific firm or industry, due to various unexpected factors – such as a new market entrant, regulatory shifts, shortages in labor, parts, etc. – systematic risk arises from market-wide shocks – such as changes in GDP, inflation, interest rates, government policies, or even acts of nature – which introduce uncertainty across all market participants. In asset pricing, investors – and by extension firms – can diversify away the unsystematic component of risk (i.e. firm-specific risk) by holding a broad range of asset classes, which cancel each other out. However, since the exposure of a portfolio to the entire market cannot be mitigated through diversification, systematic risk remains the component with the most relevance for firms and investors. As cross-border acquisitions can utilize differences across international markets, they are devices firms may be able to use to lower their systematic risk. Therefore, systematic risk is a particularly relevant measure of risk for our analysis.

While standard event study methodologies normally estimate the information content of M&A announcements and other news, by means of abnormal returns, using some variant of the market model benchmark, we take a different approach. Unlike ordinary events that mainly influence cash flows – and whose information content can be estimated by a standard event study – a merger causes changes in both the risk and returns of individual securities. As a matter of fact, Brown, Harlow, & Tinic (1988) showed that many events cause the variance of returns to shift due to a temporary (or permanent) shift in systematic risk, so that the use of common methods may fail (Boehmer, Masumeci, & Poulsen, 1991). If the news about the merger impacts on a firm's systematic risk, on top of any future cash flows, benchmark parameters (factor loadings) estimated unconditionally during the estimation period (pre M&A announcement) will be biased and unable to be employed in the event window (post M&A announcement), since the betas may have shifted. Most event studies use pre-announcement benchmark parameters to estimate post-announcement returns, while our aim is to actually model possible shifts in risk. Therefore, following MacKinlay (1997), to address whether an event impacts on risk we need to formulate the market model to allow betas to change over the event.

In modeling the share price returns of cross-border acquirers, we opt for the Carhart Four-Factor Model. While the majority of the literature has examined similar events using residuals from single-factor asset pricing models, such as the market model or the Capital Asset Pricing Model (CAPM), multifactor models have been reported to explain more variation in the cross-section of average stock returns (over 95% compared to 70% on average by the CAPM). Fama and French (1993), particularly, point out that residuals from three-factor regressions will do a better job in isolating the firm-specific components of returns in event studies of the stock-price response to firm-specific information. A multifactor model is therefore more apt for the purposes of our study.

Using daily share price returns data from CRSP, we first calculate Total Risk as the total variability in a security's returns (Lubatkin & O'Neill, 1987), measured as the standard deviation of a firm's returns after accounting for the risk-free rate,  $\sigma(R_{it} - R_{ft})$ . Thus, we calculate the standard deviation of the daily returns for each acquirer six months (120 trading days) before and six months after a cross-border M&A announcement as

follows:  $TR(t, T) = \sqrt{\frac{\sum (x - \bar{x})^2}{(n-1)}}$ .

To estimate the acquirer's systematic risk before and after each announcement we use the Carhart Four-Factor Model:

$$R_{it} - R_{ft} = \alpha_{it} + \beta_{1i}(R_m - R_f)_t + \beta_{2i}HML + \beta_{3i}SMB_t + \beta_{4i}UMD_t + \varepsilon_{it} \quad (1)$$

where  $R_{it} - R_{ft}$  is the excess return of firm  $i$  minus the one-month T-bill (risk-free) return at time  $t$ . In the Carhart Four-Factor Model,  $\alpha_{it}$  is the risk-adjusted abnormal return of firm  $i$ ;  $(R_m - R_f)_t$  is the difference between the daily NYSE-AMEX-NASDAQ value-weighted market portfolio returns and the risk-free return; high minus low ( $HML$ ) is the difference between the returns on a portfolio of high book-to-market stocks and a portfolio of low book-to-market stocks; small minus big ( $SMB$ ) is the difference between the returns on a portfolio of small stocks and a portfolio of large stocks and is a proxy for small-firm risk; up minus down ( $UMD$ ) is the return on a zero-cost portfolio that is long previous return winners and short previous loser stocks, which controls for momentum, the empirically observed tendency for rising asset prices to rise further and falling prices to keep falling. Therefore, the four risk parameter coefficients (factor loadings)  $\beta_{1-4i}$  jointly represent the systematic risk of the firm.

Having estimated risk parameters for every firm in our sample during both periods, before and after the merger announcement, we proceed to calculate Systematic Risk  $SR(t, T)$  for each period, by adjusting Total Risk  $TR(t, T)$  using the coefficient of determination ( $R^2$ ) of eq. 1 above as follows:

$$SR(t,T) = \sqrt{TR(t,T)^2 \cdot R^2(t,T)} \quad (2)$$

Finally, we calculate the annualized systematic risk for the two periods as

$$AnnSR(t,T) = SR(t,T) \cdot \sqrt{252} \quad (3)$$

and our dependent variable ( $\Delta Risk$ ) is the difference in the annualized systematic risk of the acquirer's stock returns during the 120 trading days after the acquisition announcement and that during the 120 trading days prior to the announcement:

$$\Delta Risk_i = \frac{AnnSR_{i(0,120)} - AnnSR_{i(-120,-1)}}{AnnSR_{i(-120,-1)}} \quad (4)$$

A positive value of  $\Delta Risk$  indicates an increase in the systematic risk for the acquirer and a negative one suggests a decrease in the risk. To explain the variation in the post-acquisition changes in the acquirers' risk and directly test our study hypotheses, we employ the following general equation:

$$\Delta Risk_i = \beta_0 + \beta_1 IR_i + \beta_2 CD_i + \beta_3 ID_{D_i} + \beta_4 ID_{U_i} + \beta_5 IR_i \times CD_i + \beta_6 IR_i \times ID_{D_i} + \beta_7 IR_i \times ID_{U_i} + \beta_8 CD_i \times ID_{D_i} + \beta_9 CD_i \times ID_{U_i} + \beta_{10} X_i + \beta_{11} Y_i + \varepsilon_i \quad (5)$$

where  $IR_i$  is *Industry Relatedness* for each deal ( $i$ ) in the sample,  $CD_i$  is the *Cultural Distance* between the acquirer's (US) and the target's nation,  $ID_{D_i}$  and  $ID_{U_i}$  is the *Institutional Distance* for downstream and upstream deals respectively,  $X_i$  denotes a set of control variables known to influence systematic risk, and  $Y_i$  is a set of year fixed effects.

### Independent Variables

We measure *Industry Relatedness* ( $IR$ ) as a dummy variable, which equals one if the acquirer and the target share the same primary four-digit SIC industry code and zero otherwise. We calculate *Cultural Distance* ( $CD$ ) based on Hofstede's (2001) four cultural dimensions, using the composite measure from Zhou et al. (2016). Specifically, for each M&A deal in our dataset we compute the cultural distance as  $[\sum_{i=1}^4 (S_{T,i} - S_{A,i})^2] / 4$ , where  $S_{T,i}$  and  $S_{A,i}$  denote

the cultural scores of the target and home (US) countries respectively. Kaufmann et al. (2011) measure country governance quality using World Governance Indicators (published by the World Bank) on control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability. Following Ellis et al. (2017), we measure *Institutional Distance (ID)* as the averaged differences between the target country's and the US's scores on each dimension. We categorize *ID* into *Downstream Institutional Distance (ID<sub>D</sub>)* when *ID* is negative and into *Upstream Institutional Distance (ID<sub>U</sub>)* when *ID* is positive.

### **Control Variables**

To control for pre-acquisition risk-magnitude effects and also to calibrate our sample to the “regular” levels of systematic risk for each firm, we control for  $AnnSR_{(-120,-1)}$ , the acquirer's pre-M&A annualized risk during the six months prior to the announcement. We also expect the broader economic conditions and the mergers market to play a significant role in forming the acquirers' post-merger risk reactions. Hence, we first employ the dummy variable *Recession*, which takes the value one for deals that took place during the global financial crisis of 2008-2010 and zero otherwise. Along the same lines, as merger waves are identified as a key driver of takeover activity in the M&A literature, we use the dummy variable *Merger wave*, which takes the value of one for deals that took place during 2003-2008 (the 6<sup>th</sup> wave) and after 2012 (the still ongoing 7<sup>th</sup> wave) and zero otherwise. Following Han (2007), we also control for changes in the CBOE Volatility Index (VIX), which represents the average implied volatility of the at-the-money index options 30 days before expiration and is therefore a valid proxy for the instantaneous volatility of the S&P 500 index. To proxy for market sentiment, we employ the American Association of Individual Investors (AAII) sentiment measure, deriving from a weekly (every Thursday) survey of individual investors,

where responses are classified as bullish, bearish, or neutral. Following Fisher and Statman (2006) and Kurov (2008), we compute an investor sentiment index as the number of bullish investors expressed as a percentage of the number of bullish plus bearish investors. We match both variables,  $\Delta VIX$  and  $\Delta Sentiment$ , to the event window of our dependent variable.  $\Delta VIX$  is therefore measured as the difference in VIX and  $\Delta Sentiment$  as the difference in the mean AAI sentiment, between 120 trading days after and 120 trading days prior to the announcement.

We also control for deal-level variables that might confound our dependent variable. We control for the percentage of the deal value paid in *Cash*, since stock payments can reduce the information asymmetry by linking the payment to the target performance, while cash payments indicate confidence on the part of the acquirer about the deal. We also control for *Relative Deal Size*, the ratio of the total amount paid to the target, to the acquirer's market value at the year-end prior to the deal. In addition, the *Percent of Shares Acquired* indicates the level of control the acquirer has over the target, which predicts the return and risk the acquirer shares with the target. Firm-level variables expected to influence our dependent variable are the acquirer's *Price/Book Ratio* and *Leverage* (ratio of total debt to total assets). The *Price/Book Ratio* is used to control for whether the acquirer's stock is undervalued or overvalued, while leverage is an important financial ratio predicting financial distress and failure (Beaver, 1966).

### **Descriptive Statistics**

Table 1 shows the distribution of the sample by various groups. It is important to note that cross-border M&As, on average, generate a 0.18 (18%) significant increase in risk. Panel A presents the sample distribution across target nations. The UK and Canada are the top two target nations for US acquirers, making up 20% and 16% of our sample, respectively. In

addition, on average, the most significant risk increase comes from deals targeted in India, Italy, and Israel. While India, Italy, and Israel are the countries showing the greatest risk increase, they share different levels of cultural distance and/or institutional distance with the US. For example, India is very different in culture and institutions from the US, while Italy is more similar to the US in both respects. However, the deals targeted in both India and Italy show the largest increases in post-acquisition risk. Thus, preliminarily, cultural distance and institutional distance cannot fully explain the increase in the acquirer's risk. In the countries at a high cultural distance from the US, we also see a worse institutional environment than that of the US (e.g., Mexico has a score of 20.54 for cultural distance and one of -1.39 for institutional distance). Panel B shows the distribution of the sample by acquirer's industry. The business services and electronic equipment industries account for the largest percentages, at 21.1% and 12% of our sample. Pharmaceutical products, petroleum and natural gas, and precious metals respectively make 50.7%, 54.3%, and 64% related acquisitions, while banking acquirers make no related acquisitions. We cannot obtain a clear picture of the relationship between related acquisitions and the risk increase from Panel B. We distribute our sample by year in Panel C. The year 2008 sees a significant post-announcement risk increase of 0.64, while 2009 shows a significant risk decrease of -0.30, mainly attributable to the financial crisis. US cross-border acquirers in our sample also experienced significant risk increases in 2000 and 2002, and a significant risk decrease in 2012.

-----Insert Table 1 here-----

Table 2 reports the descriptive statistics and pairwise correlations among all variables. The mean value of *Industry Relatedness* is 0.31, indicating that we have more unrelated than related acquisitions in our sample. The mean of *Absolute Institutional Distance* is 0.481, and

that of the indicator for *Upstream* deals is 0.67, which shows that US companies in our sample predominately acquire targets in upstream countries (UK, Canada, Germany, Australia), as is also shown in Table 1. Most of the deals are paid for in cash (93.32%) and US acquirers, on average, pursue a large, controlling stake (86.49%). Cross-correlations in the table are as expected and do not raise much concern about collinearity. It is noteworthy that *Cultural Distance* and our *Upstream* deals indicator present a relatively high negative correlation (-0.74), suggesting that target countries at a high cultural distance from the US in general present a poorer institutional environment. As Ahern et al. (2015) point out, national institutions are very likely interrelated with culture, such that cultural and institutional distances can be jointly and endogenously determined. While it is not the purpose of our study to make causal inferences between the two, high correlations across explanatory variables raise collinearity concerns. To address such concerns, care was taken to ensure that, in all econometric specifications, highly related terms were mean-centered and carefully combined. The splitting of our institutional distance measure into upstream and downstream measures (Kwok & Reeb, 2000) and the subsequent mean-centering of all distance scores was applied to help reduce first-order correlations to acceptable levels, while variance inflation factors (VIFs) were used to detect multicollinearity.

----- *Insert Table 2 here* -----

## RESULTS

The results of the multivariate regression models are presented in Table 3. In the first column, the base model shows the coefficient estimates for the benchmark specification with an intercept and all control variables, for  $\Delta Risk$  as the dependent variable. In column 2, the main effects model includes the direct effects from the independent variables (IR, CD, ID<sub>D</sub> and

ID<sub>U</sub>), including all controls and year fixed effects. In column 3, in the model labelled IR × CD, we add the interaction term between *Industry Relatedness* and *Cultural Distance*. The model named IR × ID (column 4) presents the main effects plus two separate interaction terms between *Industry Relatedness* and *Downstream Institutional Distance*, and *Industry Relatedness* and *Upstream Institutional Distance*. Finally, in column 5, the model denoted by CD × ID shows the results for all main effects plus the two interaction terms between *Downstream Institutional Distance* and *Cultural Distance* and between *Upstream Institutional Distance* and *Cultural Distance*.

----- Insert Table 3 here -----

Several of our controls show significant effects on the acquirer's risk change. Not surprisingly, *pre-M&A Risk (T-120, T-1)* has a negative relationship with  $\Delta Risk$ , and acts as an effective control for the magnitude of the pre-acquisition (baseline) risk. Therefore, in the presence of this control, the remaining variance in  $\Delta Risk$  is net of confounding or scaling properties.  $\Delta VIX$  has a positive coefficient, suggesting that market volatility also amplifies an acquirer's shift in systematic risk in our sample. Meanwhile,  $\Delta Sentiment$  has a negative effect on  $\Delta Risk$ , such that a generally bullish market sentiment reduces market risk. These controls confirm the validity of our dependent variable. It is noteworthy that, while the effect of *Merger Wave* is negative, the *Recession* dummy does not capture any of the acquirer's risk change, despite the fact that, in Table 1 (Panel C),  $\Delta Risk$  appears to spike around the recession period. We attribute this to the rather crude nature of the indicator variables, which span several years and thus do not capture the intricacies that single-year dummies would. In the subsequent estimations, we include year fixed effects to remedy this. According to the

positive coefficient of *Relative Deal Size*, the acquirer's risk also increases post acquisition if the target size is large.

The two deal-level factors other than the relative deal size (percentage paid in cash and percentage of shares acquired) are not significant. The reason might be that these two variables do not present much variability in our sample of cross-border M&As. Apparently, cross-border US acquirers, at least in our sample, generally prefer full cash as the payment method (the mean and median of cash payment percentage are 93.32% and 100% as seen in Table 2) and they tend to fully acquire the target firm (the mean and median of percentage of shares acquired are 86.49% and 100%). Both firm-level controls, *Price/Book Ratio* and *Leverage*, are not significant.

The model of main effects shows that the effect of *Industry Relatedness (IR)* is positive and significant ( $\beta_1 = 0.050$ ,  $p < 0.01$ ), offering support to Hypothesis *H1*. As *Industry Relatedness* is a dummy variable, the coefficient of 0.05, suggests a 5% *ceteris paribus* increase in annualized risk for non-diversifying acquisitions, a value which is also economically significant. Therefore, contrary to Lubatkin and O'Neill (1987), who found relatedness to decrease risk in domestic acquisitions, we show that, in a cross-border context, relatedness (on its own) has a rather adverse effect on risk. Meanwhile, *Cultural Distance (CD)* and *Institutional Distance (ID)* do not appear – at least directly – to influence risk changes. The coefficient of cultural distance on the acquirer's risk change is nearly zero and insignificant, showing that cultural distance at a country level does not appear to further amplify the increased risk stemming from cultural difference at an organizational level. Whether the nature of the effect of the two layers of “double-layered acculturation” is supplementary or complementary would be a rather interesting item for future investigations. Institutional distance both downstream and upstream decrease the acquirer's post-acquisition risk, but the effects are not significant. One explanation could be that country-level

uncertainties alone do not necessarily pose difficulties or generate opportunities for acquirers. Acquirers need to exploit the integration effect between external (country-level) and internal (firm-level) risk factors to achieve a reduction in risk.

With the introduction of the first interaction term (model 3:  $IR \times CD$ ) into our model, after grand-mean-centering  $CD$ , the results of the main factors do not change, while the interaction term ( $IR \times CD$ ) has a negative effect on the risk change ( $\beta_5 = -0.01$ ,  $p < 0.01$ ), in support of  $H5$ . Thus, in cross-border M&As, relatedness and cultural distance complement each other in producing a risk reduction. As Figure 1 also illustrates, acquirers can best mitigate cross-border acquisition risks when they bid for related targets from culturally distant countries or unrelated targets from culturally proximate countries. In line with the integrated risk management perspective, the results support that the sources of risk behind the two layers of “double-layered acculturation” can simultaneously balance off against each other, reducing overall post-acquisition risk.

----- *Insert Figure 1 here* -----

In column 4 of Table 3 (model  $IR \times ID$ ), the results support that US acquirers can mitigate their risk from related acquisitions by bidding for institutionally distant targets from either downstream ( $\beta_6 = -0.177$ ,  $p < 0.01$ ) or upstream ( $\beta_7 = -0.401$ ,  $p < 0.05$ ) countries. Therefore,  $H6$  and  $H7$  are both supported, while – also in line with our expectations – the effects on the upstream and downstream sides differ in magnitude. Since the effect size of *Upstream* is around three times bigger than that of *Downstream*, acquirers enjoy the greatest risk reduction by acquiring related targets from upstream countries with higher institutional distance. Thus, the “liability of foreignness” can act as an effective risk mitigation scenario for related acquisitions, as is also shown in Figure 2.

----- *Insert Figure 2 here* -----

Finally, the results in column 5 (model ID x CD) support that bidders experience systematic risk declines when the targets are from upstream countries ( $\beta_9 = -0.041$ ,  $p < 0.1$ ), in support of *H9*. However, it appears that, for downstream targets, no combination of cultural and institutional distance distinctly influences post-acquisition risk, as we can also see from the interaction plots in Figure 3. Therefore, *H8* is not supported. It can be argued that downstream institutions have more volatile business environments, higher customer risks, and political uncertainties, which firms from upstream countries are not always equipped to address (Kwok & Reeb, 2000). Since the “liability of foreignness” coming from downstream institutions cannot be mitigated by “double-layered acculturation”, firms may be better off engaging alternative internal mechanisms, such as the ones suggested by the governance literature, i.e., contingent payouts (Reuer et al., 2004). For all the estimated models in Table 3, we also report mean VIFs. Since the mean VIFs do not exceed 2 in any of the models, we are confident that collinearity is not an issue.

----- *Insert Figure 3 here* -----

### **ROBUSTNESS CHECKS**

In Table 4, we illustrate the results from six sets of robustness checks.

First, we use an alternative measure of institutional distance. Instead of the six dimensions from the World Governance Indicators we employ scores from the Fraser Institute’s World Economic Freedom Index (Aybar & Ficici, 2009; North, 1990; Zhou et al., 2016). The index is a scalar variable ranging from 1 (low level of institutional development)

to 10 (high level of institutional development). For each deal in our sample, we calculate the difference in the scores for the target's and the acquirer's country as *EFI distance*. The results are quite robust (columns 1-3) and while support for *H1* is weak, the key risk mitigation hypotheses (*H5*, *H6*, *H8*, and *H9*) are supported.

Second, we use Altman Z-scores (Altman, 1968) as an alternative approach to cross-border acquirer risk. Altman's Z-score – widely used as a risk measure across finance and accounting – indicates a firm's likelihood of bankruptcy (Agarwal & Taffler, 2007; Reynolds & Francis, 2000) and is estimated as

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \quad (3)$$

where  $X_1 = \text{Working Capital} / \text{Total Assets}$

$X_2 = \text{Retained Earnings} / \text{Total Assets}$

$X_3 = \text{Earnings before Interest and Taxes} / \text{Total Assets}$

$X_4 = \text{Market Value of Equity} / \text{Book Value of Total Debt}$

$X_5 = \text{Sales} / \text{Total Assets}$

For each acquirer in our sample, we first calculate Z-scores one year prior to the announcement ( $Y_{-1}$ ) and one year after the announcement ( $Y_{+1}$ ), and then employ the difference between these scores  $\Delta Z (Y_{-1}, Y_{+1})$  as a new dependent variable in eq. 5. The mean (median) pre-acquisition Z-score is 4.013 (3.454) and the mean (median) change  $\Delta Z (Y_{-1}, Y_{+1})$  is -0.641 (-0.220). Since a lower Z-score suggests a higher likelihood of bankruptcy, the negative values of  $\Delta Z (Y_{-1}, Y_{+1})$  are perfectly in line with the general increases in  $\Delta Risk$ , the change in the annualized systematic risk of the acquirer's stock returns around the M&A announcement, as observed in Table 1. The coefficient estimates in columns 4-6 show that, while the main effects hypotheses (*H1-H4*) are not supported, coefficients  $\beta_5$ ,  $\beta_6$ ,  $\beta_7$ , and  $\beta_8$  are positive and significant (at least at 10%), suggesting that combinations of external

uncertainties can indeed moderate acquirers' post-merger risk and reduce the likelihood of bankruptcy.

The third set of robustness checks involves limiting our original sample to serial acquirers (i.e., acquirers that had completed at least one cross-border M&A already), to test the consistency of the empirical results for experienced acquirers. The results on the remaining 1,099 deals, shown under columns 7-9, offer support to *H5*, *H6*, and *H9*, suggesting that the integrated risk perspective generally holds for serial/experienced acquirers.

Furthermore, in line with common practice in the M&A empirical literature, we exclude acquisitions by banks, insurance companies, and financial firms (Fama-French Industry Group 17: Banks, Insurance Companies, and Other Financials). Financials usually present increased leverage and particular risk characteristics (Fama & French, 1992), while they are also often subject to complex domestic and international regulatory backdrops. To ensure that such skewed financial fundamentals and external influences do not drive our results, we exclude 122 deals from our original sample. In columns 10-12, where we re-estimate the full model from eq. 5, the majority of our hypotheses (*H1*, *H5*, *H6*, *H7*, and *H9*) are supported for the remaining 1,771 cross-border acquisitions in our sample.

Finally, given the noteworthy concentration of cross-border targets in the UK (369) and Canada (298), we deemed it necessary to eliminate the possibility that the empirical results were driven by the dominance of these major target markets. As both these target countries present better institutional development than the US (positive institutional distance), there is a risk that *H7* ( $IR \times D_U$ ) and *H9* ( $CD \times ID_U$ ) in particular – which predict that risks from industry relatedness and cultural distance can be mitigated by upstream institutional distance – may no longer hold once these countries are excluded from the analysis. In columns 13-15, where we omit UK deals, although *H1* and *H7* are rejected, the

key hypotheses *H5*, *H6*, and *H9* are still supported. These results suggest that, while in the absence of UK deals certain effects are weaker, the integrated risk approach remains an effective risk mitigation mechanism for all other target countries. In columns 16-18, we exclude the Canadian target deals and all results are qualitatively identical to those of the full sample in Table 3.

----- *Insert Table 4 here* -----

## **DISCUSSION**

In this article, we address a gap in the IB literature by investigating the risk side of performance in a cross-border M&A context. We find that the systematic risk of US acquirers of foreign firms rises by about 18% on average during the post-acquisition period. Building on Miller (1992), we theorize and test the integrated risk management perspective in the domain of international M&As. Specifically, we exploit the simultaneous trade-offs among the risks of adverse selection and moral hazard, “double-layered acculturation”, and the “liability of foreignness”.

Information asymmetry is a fundamental factor leading to the risk of adverse selection. Industry relatedness should decrease the risk of adverse selection, since the acquirer is familiar with the target’s business. Nonetheless, acquirers of related targets aim to achieve operational synergies, and are thus likely to attempt a large degree of consolidation. In an international context, high integration and implementation costs do not enable acquirers to realize operational synergy, especially when they become overconfident about their knowledge of the target and underestimate the challenges; the hubris, driven up by related acquisitions, therefore leads to risk increases for international acquirers.

In cross-border M&As, external factors, such as “double-layered acculturation” and the “liability of foreignness” further intensify acquirers’ risk by exacerbating and complicating the above internal factors of adverse selection and moral hazard. Nonetheless, our results support that external uncertainties, if configured suitably with internal ones, can mitigate acquirers’ risk in international M&As. With cultural awareness, acquirers can leverage high cultural distance to control industry-relatedness risks. After extending the upstream-downstream hypothesis of Kwok and Reeb (2000) to also account for the direction and magnitude of institutional distance, we find that firms do not necessarily expose themselves to more risk when they engage in acquisitions of downstream targets. However, institutional distance, as the key driver behind “liability of foreignness”, can mitigate acquirers’ risk from related acquisitions; thus, external uncertainty can mitigate acquirers’ risk stemming from internal factors. In addition, we show that –irrespective of target relatedness- upstream acquirers can further mitigate post acquisition risks by internationalizing into culturally distant countries. However, at least from a risk management perspective, we do not find benefits to downstream acquirers who internationalize into countries with both high cultural and institutional distance.

Our results strengthen Miller’s (1992) integrated risk management perspective of IB and offer strong support for the notion that risk factors are interactive and cannot be managed alone. As we show, acquirers’ cross-border risk is an outcome of complementary and competing effects from such factors as adverse selection, moral hazard problems, cultural distance, and institutional distance. Therefore, our results complement existing research in IB (i.e. Lubatkin & O’Neill, 1987) and international finance (Ahern et al., 2015; Siegel et al., 2011), which examine the influences of cultural and institutional distance in isolation of internal uncertainties.

One limitation of our study is our use of a sample of US acquirers only. In our study, both cultural and institutional distance are measured against the US. This may limit the applicability of integrated risk management to US acquirers. Future research could examine the research questions in a global M&A context where acquirers are from multiple countries. Furthermore, although our sector-based proxy for industry relatedness is in line with the vast majority of the extant M&A empirical research, it may not completely capture the degree of organizational similarity in business traits and goals. To fully measure how acquirers and targets share strategic interdependence, redeploy resources, and combine at an operating level, we would need primary proprietary data from internal firm sources, which are not widely available. Further research might focus on developing reliable and precise proxies for operational similarity.

Our study opens several important avenues for future research. First, future research could investigate the application of integrated risk management in the context of other internationalization strategies (e.g., international joint ventures) or with other types of uncertainties (e.g., political risk). Miller (1992) suggests a variety of levels of uncertainties firms face when internationalizing, thus offering a very solid foundation for future studies. Second, we open a research stream focused on studying and quantifying strategic international risks. With the volatile global environment, as well as the drastic development of technology, risk mitigation plays an increasingly critical role in firms' internationalization. Our measure of risk offers a sound empirical foundation for a more holistic examination of firms' strategic international risks. Third, in this paper we focus on industry relatedness as the primary indicator of firm-level differences. Future research could examine the effects of the inner layer of "double-layered acculturation" (i.e. organizational-level cultural distance) to proxy for information asymmetry and moral hazard. Lastly, with the help of our theoretical extensions and empirical approach, future research may study the aptness of the integrated

risk management perspective on international M&A failure. In other words, does the trade-off among diverse risk factors reduce the probability of cross-border M&A failure? If so, how can international acquirers manage those risk factors?

### **MANAGERIAL RELEVANCE**

Our study provides practical implications for international acquirers, who can mitigate their overall risk by integrating various risk factors. To leverage their exposure to uncertainties such as information asymmetry, moral hazard, and country-level differences, acquirers can utilize the trade-offs across their respective indicators: industry relatedness, cultural distance, and institutional distance. The simultaneous trade-offs across these indicators can provide acquirers with several scenarios for risk mitigation (see Table 5 for a taxonomy and illustrations): in Scenario I, when an acquirer wishes to target a firm in a similar line of business (i.e. High IR), overall post-acquisition risk can be reduced if the target is in a culturally distant country (High CD). In Scenario II, overall acquirer risk also decreases if a similar target is from a country with a very different institutional environment (High ID), particularly a better one. On the other hand, when merging with or taking over a firm in a different industry, overall risk is mitigated when the target is from a proximate cultural (Scenario III) or institutional (Scenario IV) background. Therefore, when an acquirer increases their exposure to information asymmetry and moral hazard – by acquiring a target from a different industry – they should decrease their exposure to the “liability of foreignness” and “double-layered acculturation” – by acquiring a target from a similar culture and institutional environment. Also, in Scenarios V and VI, when an acquirer wants to purchase a target from a foreign country in order to diversify their overall risk, it will be more rewarding to choose a target from a country which is both culturally and institutionally different. In other words, when aiming to diversify risk via overseas acquisitions, firms

should seek to increase their exposure to both cultural and institutional uncertainties, especially when they come from countries with better institutions.

Of course, not all uncertainty exposures should necessarily be eliminated, since risk-taking is an important element of the returns generation process in business. However, in scanning for cross-border M&A targets, the exploitation of trade-offs across the aforementioned uncertainties can provide acquirers with the advantage of risk mitigation before they have to invest in a sunk cost. In conclusion, we recommend that acquirers establish uncertainty exposure profiles for international M&As to help optimize their risk-adjusted returns.

*----- Insert Table 5 here -----*

**ESSAY II:**

**MITIGATING THE RISK OF DEAL ABANDONMENT IN**

**INTERNATIONAL MERGERS AND ACQUISITIONS:**

**THE ROLE OF OPERATIONAL RISK**

**ABSTRACT**

Why do firms abandon international mergers and acquisitions (M&As) despite of the substantial transaction cost? M&As may fall through because of the release of new and unexpected information after the public announcement. At country level, institutional theory helps us understand the exacerbated effect of formal and informal institutional constraints on information asymmetry between international acquires and targets. Building on institutional theory and information asymmetry argument, we apply the concept of operational risk as the contingency of country governance quality and the likelihood of deal withdrawal. Operational risk provides us a contemporary measure of organizational behavior under the various “rules of the game”. Using panel data method and a sample of 8,008 cross-border deals which includes 1,744 country pairs during 1996—2016, we find that acquiring country’s governance quality decreases the likelihood of deal withdrawal, and the risk mitigating effect is even stronger when the selling country has a strong governance mechanism as well, or when the acquiring country has high operational risk, or when the selling country has lower operational risk.

**Keywords:** mergers and acquisitions; international; institutional environment; country governance; operational risk; deal abandonment

## INTRODUCTION

International mergers and acquisitions (M&As), as a popular mode of entry, provide multinational enterprises (MNEs) from either developed or emerging markets an important means to obtain complementary resources and capabilities, and to become more internationally competitive. However, more than 40% of international M&As fail either before or after the deal is completed (Mukherji, Dibrell, & Francis, 2013). In the pre-completion stage, studies have shown that around 20% of the M&A announcements end up being withdrawn (Bates & Lemmon, 2003; Holl & Kyriazis, 1996). Deal withdrawal or deal abandonment incurs a large amount of costs including upfront costs in target selection and professional services (Bainbridge, 1990), costs of revealing private information (Officer, 2003), opportunity costs (Bainbridge, 1990), the cost of breaching the contract (e.g., termination fees) and reputational losses (He & Zhang, 2018). In this article, we focus on explaining the reasons an international M&A gets abandoned in the pre-completion stage through traditional and contemporary country-level factors.

Literature on post-acquisition performance is abundant (see review studies Haleblan et al., 2009; Martynova & Renneboog, 2008; Shimizu et al., 2004; Tuch & O'Sullivan, 2007). However, we know little about the likelihood of deal completion. Most of these studies examining the likelihood of deal closing focus on domestic M&As. The finance, accounting, and strategy scholars study a number of deal-level, firm-level, and country-level factors influencing the deal completion. At deal level, scholars have studied the impact of method of payment (Luypaert & De Maeseneire, 2015), deal hostility (Ngo & Susnjara, 2016), termination fee (Officer, 2003). At firm level, we have investigated such factors as acquisition experience (Muehlfeld, Rao Sahib, & Van Witteloostuijn, 2012), target firm accounting quality (Marquardt & Zur, 2014), interfirm status differentials (Shen, Tang, & Chen, 2014), board composition (Brickley, Coles, & Terry, 1994), state ownership of the

acquirers (Li, Xia, & Lin, 2017), and geographic distance (Chakrabarti & Mitchell, 2016). In cross-border M&As, we have been focusing on the impact of institutional distance or institutional development on deal completion (Dikova, Rao Sahib, & Van Witteloostuijn, 2010; He & Zhang, 2018; Kim & Song, 2017; Zhou, Xie, & Wang, 2016).

Drawing on information asymmetry argument, we extend institutional theory by connecting the “rules of the game” (North, 1990) of a country with contemporary organizational behaviors, operational risk. Operational risk is defined as “the losses resulting from inadequate or failed internal processes, people and systems or from external events” (Basel Committee on Banking Supervision [BCBS], 2004). It is measured from firms’ operational loss events due to one or a combination of such reasons as employee errors, system failures, technology malfunction, and internal fraud etc. Under three pillars of the regulatory, cognitive, and normative, a strong country governance system provides the firms a business environment with less transaction costs and uncertainty, and more knowledge sharing and information flow (Scott, 1995). Institutional theory offers us the environmental explanations on how MNEs perform in their internationalization process (Dikova et al., 2010; Kostova & Dacin, 2008). However, both formal institutional constraints (such as regulations, rules, and laws) and informal institutional constraints (such as shared values, conventions, and codes of conduct) play parts of the incomplete and imperfect information between acquirers and targets in international M&As.

Information asymmetry is the main culprit of deal abandonment. The acquirer could not have a full picture of the target’s firm information, preferences, and incentives before the public announcement. A deal withdrawal usually occurs because of the release of unexpected information after the announcement (Davidson III, Rosentein, & Sundaram, 2002; Hotchkiss, Qian, & Song, 2005). The reasons for the revealing of new information could be (1) there is a misunderstanding of the information shared; (2) unanticipated regulatory changes; (3) the

acquirer made mistakes or did not evaluate the target's information as fully and precisely as the acquirer should; (4) the target firm intentionally hid or fabricated its information before the announcement in order to sell or sell at a high premium (Akerlof, 1970; Anagnostopoulou & Tsekrekos, 2015; Reuer, 2005). While institutional theory provides us the environmental explanations on reason one and two because organizations are "purposive entities designed by their creators to maximize wealth, income, or other objectives defined by the opportunities afforded by the institutional structure of the society" (North, 1990: 73), operational risk helps us dive into the behavioral aspects of information asymmetry regarding the imperfect information on what checklist the acquirer should evaluate (e.g., reason three) and what the target firm has done in the past (e.g., reason four).

Using a sample of 8,008 cross-border M&As which includes 1,744 country pairs (target nation and acquirer nation) during 1996 to 2016, we find that the better the acquiring (i.e., acquirer's) country's governance quality is, the lower the likelihood of the deal abandonment. Furthermore, when the selling (i.e., target's) country's governance quality is also high, the acquiring country's governance quality decreases even more of the likelihood of the deal abandonment. When the target governance (i.e., selling country's governance quality) is low, the deal is more likely to withdraw despite of the level of the acquirer governance (i.e., acquiring country's governance quality). Instead of examining the effect of institutional environment through institutional distances as an approach of differences, we precisely investigate the individual effect of acquirer country's and target country's institutional development, and we find more methodological reliable and practitioner friendly risk mitigation scenarios (Edwards, 2001). Additionally, the level of acquiring or selling country's operational risk has different moderating effect on the acquirer governance as well. When the acquirer is from a country with strong governance mechanisms as well as high operational risk, the acquirer is less likely to abandon the deal with the foreign target. The

acquirer transferred its learning from its or others' operational loss events to acquisitions and is more prepared and cautious in target selection and evaluation. However, in comparison, when the target is from a country with high operational risk, the acquiring country's governance quality would not have a as strong effect on mitigating the deal closing risk. A target from high operational risk environment tends to fabricate its firm information, have reputational losses which triggers a negative market reaction to the M&A announcement, and thus diminishing the risk mitigating effect of acquiring country's governance quality.

Our study provides two contributions. First, we extend the scope and effect of institutional theory in firm internationalization strategy by cooperating the role of another contemporary country-level factor, operational risk. Institutional theory has provided us the environmental explanations through countries' regulative, normative, and cognitive pillars in international business activities (North 1990; Scott, 1995). Institutional distance, as the key driver of "liability of foreignness" (Eden & Miller, 2004), offers rich and meaningful insights on the performance and strategy making of firms' internationalization. Although organizations are assumed to modify "in the direction of increasing compatibility with environmental characteristics" (DiMaggio & Powell, 1983, p.149), organizations and employees are subjective and "act on their own perceptions and act in unpredictable as well as predictable ways" (Astley & Van De Ven, 1983). By applying the concept of operational risk, we combine the "rules of the game" and organizational actions, enriching the institutional theory with a behavioral aspect or a measured outcome of enforcement. Operational risk is a contemporary measure of organizational behavior and country-level variations, which further helps the institutional theory to identify the co-evolutionary and dynamic effect between MNEs activities and governance development.

Second, we disentangle the institutional distance by examining the direct and interaction effect between acquiring country's and selling country's governance quality on

the likelihood of international deal completion, which is a more mythological reliable and practitioner friendly approach. The approach of using difference scores (i.e., institutional distance) produces a lower reliability than either of the two component measures (Edwards, 2001). Moreover, the distance approach does not have a clear managerial implication as in how big of an institutional distance is high or small and which country minus which. In this article, we provide the simple direct effect of acquiring country's governance quality on the likelihood of deal completion, with either selling country's governance quality in presence or absence, and, if in presence, the score range from World Governance Indicator (WGI) to mitigate the deal closing risk.

The rest of the paper is organized as follows: in the next section, we discuss the theoretical framework and put forward testable hypotheses. Then, we present our empirical data and methodology. The fourth section illustrates the results and the fifth provides robustness checks to support our empirical results. The last section concludes with the discussion of our theoretical and managerial contributions, limitations, and the future research directions that we implied.

## **THEORETICAL BACKGROUND**

### **Information Asymmetry in International M&As**

An M&A process, before the deal completion, has two stages called private and public takeover process (Boone & Mulherin, 2007). During the private takeover process, the bidder sets its own search criteria, receives private information from the seller (target) that it is interested in buying, evaluates the seller, and thus makes the initial offer/announcement (Dikova et al., 2010). After the public announcement, the public takeover process is exhaustive and usually takes several months to complete. The two firms continue to receive new information as the negotiation and due diligence extend (Hotchkiss, Qian, & Song,

2017). The release of new information demands a renegotiation and repricing between two firms. When the two firms cannot agree on the final price by the due date and leave both parties dissatisfied, the deal gets abandoned (Davidson III, Rosenstein, & Sundaram, 2002; Kim & Song, 2017). Thus, any unexpected information released during public takeover process can be detrimental for the deal closing (Mitchell & Pulvino, 2001).

Information asymmetry is the very first factor determining the likelihood of deal success (Akerlof, 1970; Kim & Song, 2017). The reasons for the release or identification of new information after rather than before the public announcement can be summarized into three. First, the acquirer and/or the target have difficulties accessing to the accurate evaluations because of the institutional distance, underdeveloped institutional systems, or institutional voids (Khanna & Palepu, 2000a, b; Kim & Song, 2017; Ragozzino & Reuer, 2011). Second, the acquirer did not have a comprehensive checklist while evaluating the target during the private takeover process due to managers' hubris or lack of knowledge in M&A process. After the announcement, the acquirers often hire professional advisors to do thorough due diligence, which can identify new and unexpected information about the target company. Third, the seller/target intentionally hides or fabricates its firm information in order to sell the company at a high premium to the bidder/acquirer (Anagnostopoulou & Tsekrekos, 2015; Reuer, 2005). While institutional theory helps us understand the first reason for information asymmetry between two firms, operational risk provides us new lens revealing the second and third reason.

According to North's (1990) political economy theory, country governance (i.e., rules of the game) serves the business activities with less uncertainty and transaction costs. Both the formal and informal institutional constraints vary across countries. While international M&As face substantial regulatory scrutiny and transactional complexity, strong institutional governance mechanisms from at least one party of the cross-border deal help with the

takeover process. Well-developed institutional environment protects the investment and shareholders, creates a transparent platform for the firms to share information, and therefore has low information asymmetry with other countries. Scholars find that institutional distance between two parties have negative effect on deal completion (Dikova et al., 2010; He & Zhang, 2018; Lim & Lee, 2017; Zhou et al., 2016). Despite that country governance quality increases information sharing and facilitates the process of deal completion, the explanatory effect is contingent on the degree of enforcement of “rules of the game”. “Rules of the game” provide the accessibility to the information, while the players’ actions are the realized information learning activities. In this article, we investigate the players’ actions through their operational loss events, which could help us understand more with the reasons for the revealing of new, unexpected information.

### **The Definition and Literature Review of Operational Risk**

*Operational risk* is the risk of (operational) losses from the failure of people, process, systems and external factors. The term “operational risk” was born in 1990s. The tipping point for ‘operational risk’ to get interests from practitioners and researchers is when Barings was brought down by Nick Lesson. Basel Committee classified operational risk into the following event types: (1) internal fraud, (2) external fraud, (3) employment practices and workplace safety, (4) clients, products and business practices, (5) damage to physical assets, (6) business disruption and system failures, (7) execution, delivery and process management (please see Table 6 for detailed definitions and examples). Some examples of operational loss events include technology failure, improper business practices, employment discrimination, employee errors etc.

-----Insert Table 6 here-----

Based on BCBS's classification, Moosa and Li (2013) categorize operational risk under four headings: people risk, technology risk, process risk, and external risk. People risk arises from human error, employee misdeeds, and inadequate employee development and recruitment. Thus, people risk, defined as the major source of operational losses, is highly associated with corporate governance, corruption, ethical standards, internal controls within firms and management style. Process risk results from inefficiency or ineffectiveness in value-driving processes (i.e., sales and marketing, product development and customer support) and value-supporting processes (i.e., human resources and legal matters). System (or technology) risk arises from the system breakdown, data quality and poor project management, which depends on the state of technology. External risk is caused by macroeconomic and socioeconomic events as well as the actions of external parties (e.g., external fraud). Thus, external risk is determined by the economic fluctuation, regulatory change, and environmental standards. The classification from Moosa and Li (2013) extends the operational risk concept from banking industry to all other industries.

In finance and banking literature, scholars study the determinants, consequences, and modeling of operational risk. They demonstrate that operational loss events do not only cause company a fortune by the loss amount, but also impact stock market reaction and generate reputational losses (Cummins, Lewis, & Wei, 2006; Karpoff & Lott, 1993; Perry & De Fontnouvelle, 2005). Cummins et al. (2006) find that the decline in market value after the operational loss announcement significantly exceeds the operational loss amount. Operational risk thus has a spillover effect. In order to mitigate operational risk, finance scholars have proposed various quantification methods using operational loss events data: extreme value theory, dependent risk processes, operational Value at Risk, and aggregation measures (Chavez-Demoulin, Embrechts, & Hofert, 2016; Chavez-Demoulin, Embrechts, &

Nešlehová, 2006; Cruz, 2002). Furthermore, corporate governance is found to be the most impactful determinant of the quality of internal control as well as operational risk (Chernobai, Jorion, & Yu, 2011).

Companies in all industries and countries nowadays are suffering from operational loss events. With the development of technology, the growth of e-commerce, large-scale M&As, and increased outsourcing, operational risk becomes a business concern for all industries in every country (Alexander, 2003). Moosa (2007) also suggests that organizations expose themselves to operational risk more with increasing dependence on technology, intense competition, and globalization. After conducting the cross-country comparison, Cope, Piche, and Walter (2012) find that countries share different operational loss event types in dominance because of the country difference in governance quality and GDP per capita. Moosa and Li (2013) argue that the frequency and severity of operational loss events are significantly related to country-level factors.

## **HYPOTHESIS DEVELOPMENT**

### **Acquirer's Country Governance**

According to institutional theory, institutions that comprise the rules of a society or “humanly devised constraints that shape human interaction” (North, 1990). “Rules of the game” vary across nations. Scholars find that the better quality of the acquirer’s country governance is, the higher chance of deal completion (Ellis et al., 2017; Lim & Lee, 2017; Zhou, Xie, & Wang, 2016). With strong governance mechanisms to control for the managerial discretion, managers are less likely to act on acquisitions without exhaustive appraisal processes. With the absence of strong governance quality, acquirers’ managers are more likely to make hubris acquisition decisions under which the managers make mistakes in selecting and evaluating target firms (Seth, Song, & Pettit, 2002). After the announcement, if the professional

services' due-diligence finds out new information, the deal gets abandoned. In other words, acquirers from better institutional environment have more discretion in targets selection, evaluation, pricing, and due diligence process, which minimizes the possibility of new and unexpected information coming up after the public announcement, and thus improving the chance of deal completion.

Institutional environment helps reduce the information asymmetry between acquirers and targets (Dikova et al., 2010; Kim & Song, 2017). Institutions serve the firms with reducing the uncertainty and transaction costs by enforcing rules and regulations (North, 1990). Less developed institutions do not only create higher enforcement and measurement costs, but also greater amount of information asymmetry (Akerlof, 1970). Further, better country governance means that firms can have access to sufficient contracting devices that are not available with poorer governance (Ellis et al., 2017), which facilitates the public takeover process and helps overcome risks of incomplete contracting (Coase, 1937; Williamson, 1979). In addition, finance and law literature find that firms in better country governance have more access to funding (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998), which is essential for an international M&A to complete after necessary re-negotiation. Many international deals failed to complete due to the premium pricing during public takeover process. Access to funding helps acquirers to pay the target at a re-negotiated and new price that is higher than the public announcement price. Therefore, we propose that acquirers' country governance decreases the likelihood of deal withdrawal.

*H1. The better the Acquirer's Country Governance, the lower the likelihood of Deal Withdrawal*

## **Acquirer's and Target's Country Governance**

When the acquirers are from well-developed institutions, the international M&As would be more likely to complete if the targets also have strong governance mechanisms. Scholars find that high institutional distance decreases the likelihood of deal completion (Dikova et al., 2010; He & Zhang, 2018; Lim & Lee, 2017; Zhou et al., 2016). Zhou et al. (2016) especially find that, for emerging markets' multinational corporations (EMNCs), institutional distance decreases the likelihood of deal completion more when the EMNCs are being purchased by buyers from developed economies but less when the EMNCs are purchasing targets from developed economies. The institutional quality of the host or target country has a positive effect on the likelihood of deal completion and the deal performance (Aybar & Ficici, 2009; Gubbi et al., 2010; Zhang, Zhou, & Ebbers, 2011). When the targets are from less developed institutions, businesses may be conducted based on vague and personalized interpretations rather than the structured and standardized legislations and regulations in more developed institutions (Henisz & Zelner, 2010). The poorly defined business environment will create misunderstandings and misinterpretations for the acquirers that are from developed institutions during the negotiation and due diligence process and the acquirers will consequently be more likely to withdraw from the deal.

More institutionally developed economies are more likely to provide protections for investments, share tangible and intangible knowledge (Berry, 2006), and less costly information (Khana & Palepu, 2000a, b). Specifically, at the private and public takeover processes, target firms from more developed institutions are more transparent and qualified with their accounting and finance information. The quality of targeting firms' accounting significantly increases the likelihood of deal completion (Marquardt & Zur, 2014). The acquirers will have less information asymmetry with the target, which means acquirers will be less likely to find out unexpected information about the target firm after the public

announcement. With weak governance mechanisms, the corporate disclosure system may be underdeveloped, which limits the pre-due diligence scope and thus generates biased evaluations (Kim & Song, 2017). In addition, weak institutional environment often entails more unpredictability in regulatory and legal systems. When the targets are from less developed institutions, it is more likely for acquirers to encounter unexpected changes (e.g., unusual policy changes by the target country government) after the public announcement (Zhou et al., 2016). Therefore, when the quality of acquirers' country governance is high but that of targets' is not, there would be more information asymmetry and learning obstacles between two parties, and thus a higher probability of deal withdrawal.

*H2. The relationship between Acquirer's Country Governance and Deal Withdrawal is stronger when the Target's Country Governance is higher rather than lower.*

### **Acquirer's Country Governance and Acquirer's Operational Risk**

The M&A deal gets abandoned after public announcement usually because of the new and unexpected information released. One reason for the revealing of new information is that acquirer did not do an exhaustive evaluation of the target before making the offer because of the acquirer's lack of experience. Another reason is that the deal is not a well-proposed one because of managerialism (acquirer's managers did not carefully select the target with shareholders' interest in mind) or hubris (acquirer's managers are overconfident). With a strong country governance mechanism, the acquirer tends to have more managerial discretion, which decreases the chance of "bad lemon" selection (Akerlof, 1970), thus increasing the likelihood of deal completion. Moreover, the likelihood will be even more elevated when the acquirer country's operational risk is higher rather than lower.

When the acquiring country's operational risk is higher, meaning many firms located in the country have severely realized operational losses from events such as internal or external fraud, employee errors, product deficiencies, and accounting churning etc. The business environment of high operational risk prepares the acquirer with more experience in risk management, employee training, and operational execution, which in turn helps the acquirer develop a more comprehensive checklist for its target selection and evaluation. Caterpillar, U.S. heavy-equipment behemoth, acquired ERA Mining Machinery Ltd, a Chinese coal-mine company, for \$677 million in 2012. The deal was perceived as an easy-money. Ironically, the "easy-money" part was exactly the problem leading the deal to a failure: "due diligence oversights on Caterpillar's part and alleged deliberate, multi-year, coordinated accounting misconduct" (CB Insights, 2016). When the acquirers from countries with strong governance and high operational risk, the acquirers tend to have more competitive capabilities in strict target selection and assessment, thus increasing the likelihood of deal completion.

*H3. The relationship between Acquirer's Country Governance and Deal Withdrawal is stronger when the Acquirer's Operational Risk is higher rather than lower.*

### **Acquirer's Country Governance and Target's Operational Risk**

"Rules of the game" serve the firms and people with well-defined boxes and arrows. Scott (1995) defines three pillars of the institutional framework—regulatory, cognitive, and normative, which includes rules and social values. Organizations are modified to be complied and compatible with these institutional coercive, mimetic, and normative pressures (DiMaggio & Powell, 1983). When an acquirer purchases a target from a different institution, acquirers could learn about the three-pillar pressures and has a rough perception about the

target firm's organizational structure, principles, and characteristics because of the isomorphism (Kostova, Roth, & Dacin, 2008; Kostova & Zaheer, 1999). However, the system-structural view (*organizational behavior is seen to be shaped by a series of impersonal mechanisms that act as external constraints on actors*) does not fully predict that all employees would behave in a conformity and coherence manner. According to action theory, employees or individuals act on their own perceptions and behave in unpredictable as well as predictable fashions (Astley & Van De Ven, 1983). Thus, the acquirer could not have full knowledge of the personnel action or employee behavior within the target firm. Operational risk is a helpful measure for that.

“The definition of operational risk tells us that a major source of operational risk is people risk—the risk of incurring losses because of the failure of people in the sense of having criminal tendencies or because they are incompetent” (Li & Moosa, 2015). When the targets' operational risk is high, the employees are more likely to fail to meet obligations to clients or product designs, more likely to make mistakes in practices or task deliveries, and more likely to commit frauds and violations even with acquirer's strong governance mechanisms. In addition, under high operational risk, firms may have fabricated their financial and accounting information in order to sell at a higher price. The information hidden or fabricated can be some operational losses from employment practices, system or process errors etc. During the public takeover process, acquirers usually execute an even more thorough on-site due diligence review, which could potentially reveal more unexpected information about the target firm if the targeted country has high operational risk. Moreover, operational risk leads to high reputational loss (Cummins et al., 2006; Karpoff & Lott, 1993; Perry & De Fontnouvelle, 2005). When the targets are from countries with low reputation in doing business in, the deal announcement will have negative market reactions which puts pressure on two parties and impedes the deal completion process. Therefore, we propose that

when the target is from a country with high operational risk, the risk mitigating effect of acquirer's country governance on deal abandonment will be weakened.

*H4. The relationship between Acquirer's Country Governance and Deal Withdrawal is stronger when the Target's Operational Risk is lower rather than higher.*

## **DATA AND METHODOLOGY**

### **The Sample of Cross-Border M&As and Operational Loss Events**

We collected cross-border M&A deals data on international acquirers and targets from Thomson EIKON Deals (formerly Thomson One - SDC). Our original data included all announced deals (completed and withdrawn) during the period 1995-2017, where the acquirer or the target was from any country and the deal must be international (i.e., the acquirer's country is different from the target's country). The size of the deal had to exceed \$1 million. Additionally, we collected the data of global operational loss events from SAS software. The original dataset covers 34,780 operational loss events that occurred from 1900 to early 2017 in 141 countries. The data includes such variables as the name of the firm that experienced the operational loss, the parent firm, loss amount, the country where the loss occurred, the country where the firm has its headquarters, the event risk level and category, key dates of the loss event, etc. The screening and integrating procedure resulted in a sample of 8,008 observations which includes 1,744 country pairs (target nation and acquirer nation) and years from 1996 to 2016 for which we were able to collect data on all of the necessary variables.

### **Variables and Model Specification**

We measure our dependent variable, Deal Withdrawal, at country level. For each acquirer country and target country, we calculated the *Withdrawal Ratio* as the ratio of number of

deals withdrawn in a year to the number of total deals announced in that year. Thus, for each pair of acquirer nation and target nation, there is a different withdrawn ratio for each year. Our independent variables include the acquirer country's and the target country's operational loss severity (*Acquirer OPR* and *Target OPR*), acquirer's and target's country governance (*Acquirer Governance* and *Target Governance*). A country's average operational loss severity is measured as the ratio of its total severity in a year to its frequency of operational loss events occurred in that year (Li & Moosa, 2015). We take the logarithm of the average operational loss severity as our measure. Operational loss frequency is the number of operational loss events happened in that country in a year while the total operational loss severity is the total loss amount of all operational loss events occurred in that country in that year. In addition, Kaufmann, Kraay, & Mastruzzi (2011) measure country governance quality using World Governance Indicators (published by the World Bank) on control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability. Following Ellis et al. (2017), we measure *Acquirer Governance* and *Target Governance* as the average score on all six dimensions for each acquirer nation and target nation.

In addition, even though the panel data method is supposed to consider the unobserved heterogeneity by the method itself, we controlled for two other country-level effects such as acquirer's and target's economy sizes (i.e., annual GDP) from the World Bank (*Acquirer GDP* and *Target GDP*), and acquirer's and target's cultural values (*Acquirer Cultural Values* and *Target Cultural Values*) according to Hofstede's dimensions (Hofstede, 2001).

Then we specify our analysis model at country level with acquirer country's and target country's governance quality and average operational loss severity for each year. Thus, our model is characterized to be analyzed via panel data method with the varying observation

as each country-pair (target nation and acquirer nation) and with the variant time as year. Panel data method allows us to control for unobserved heterogeneity, and thus to get consistent estimates. It further enables us to study the dynamics of the relationship between country governance quality, long-lasting operational risk and international M&As' closing risk. Specifically, we use the following model to analyze our panel data.

$$\begin{aligned}
\text{Withdrawal Ratio}_{it} = & \beta_0 + \beta_1 (\text{Acquirer GDP}) + \beta_2 (\text{Target GDP}) + \\
& \beta_3 (\text{Acquirer Cultural Values}) + \\
& \beta_4 (\text{Target Cultural Values}) + \\
& \beta_5 (\text{Acquirer Governance})_{it} + \beta_6 (\text{Target Governance})_{it} + \\
& \beta_7 (\text{Acquirer OPR})_{it} + \beta_8 (\text{Target OPR})_{it} + \\
& \beta_9 (\text{Acquirer Governance} * \text{Target Governance})_{it} + \\
& \beta_{10} (\text{Acquirer Governance} * \text{Acquirer OPR})_{it} + \\
& \beta_{11} (\text{Acquirer Governance} * \text{Target OPR})_{it} + \alpha_i + \lambda_t + \varepsilon_{it} \quad (1)
\end{aligned}$$

where,  $i$  indicates every country pair during year  $t$  ( $t = 1996, 1997, \dots, 2016$ ).  $\alpha_i$  is unobserved country effect,  $\lambda_t$  is unobserved time effect and  $\varepsilon_{it}$  is the idiosyncratic error.

Panel data method includes the fixed effect model, random effect model, and population-averaged model. Fixed effect method allows the unobserved heterogeneity to be correlated arbitrarily with the independent variables in the model while random effect method assumes that the unobserved country effect ( $\alpha_i$ ) is purely random (Wooldridge, 2010). Differing from the fixed and random effect methods, population-averaged model estimates the coefficient on averaging across the whole population rather than for the typical individual or group subject (i.e., country pair). Based on the nature of our research questions and data, the international deals occurred within one country pair (e.g., United States and China) might be correlated, thus violating the independence assumptions of the traditional regression

models (Hubbard et al., 2010). Population-averaged model, using the generalized estimating equations, estimates the effect by averaging the country-pair specific model across all country pairs. Furthermore, population-averaged model does not fully specify the distribution of the population while the cluster-specific model (i.e., fixed and/or random effect models) does require a fully, jointly, and correctly specified distribution (Neuhaus, 1992; Neuhaus, Kalbfleisch, & Hauck, 1991). Given the proved robustness and usefulness (Hubbard, et al., 2010), we used population-averaged model to analyze our panel data and address our research questions.

### **Descriptive Statistics**

Table 7 shows the distribution of the sample by various groups. Panel A presents the sample distribution across acquirer nations while panel B shows the sample distribution by target nations. Over years of 1996 to 2016, the top five acquiring nations are the United States (US, total 6,720 outbound deals), United Kingdom (total 4,216 outbound deals), Canada (total 2,967 outbound deals), Hong Kong (total 2,677 outbound deals), and Japan (total 1,532 outbound deals). In the meantime, the top five targeted nations are the United States (total 5,774 inbound deals), China (total 3,216 inbound deals), United Kingdom (total 2,673 inbound deals), Canada (total 2,207 inbound deals), and Australia (total 2,111 inbound deals). As the table shows, highly withdrawn countries are not necessarily those most acquiring or targeted countries. Thus, we calculated the ratio of withdrawal as the dependent variable which takes into account the deal volume. One outstanding note to point out is that the United States has much less operational risk severity comparing to other countries such as Germany, Spain, and Italy etc. Panel C presents the sample distribution by year. Year 2007 has the most deals announcements as 3,173 in total) while year 1996 has the least as 678 in total. Meanwhile, year 2016 has the highest withdrawal ratio as 29.39% while year 1998 has the

lowest as 12.48%. Panel D lists the top twenty pairs of target nation and acquirer nation. Our sample has the most international M&As initiated between country pairs such as the US and Canada, the US and UK, the US and Australia. Among the top twenty country pairs, most withdrawals occurred between mainland China and Hong Kong, and China (as target nation) and Singapore (as acquirer nation). However, the most popular country pairs for international M&As are not necessarily the most failed at the pre-completion stage, which will be shown clearly combining with the simple statistics.

-----Insert Table 7 here-----

Table 8 reports the descriptive statistics and pairwise correlations among all variables. The table shows that none of the pairwise correlations is very high, which means the existing probability of multicollinearity issue is presumably low. Furthermore, the pairwise correlations tell us that all four independent variables have negative correlations with the *Withdrawn Ratio* (even *Target OPR*'s correlation is insignificant but negative). It is interesting to see that *Target Governance* has a relatively higher negative correlation with the *Withdrawal Ratio* (-0.0771\*\*\*) than the *Acquirer Governance* does (-0.0563\*\*\*). Thus, better governance quality from both acquirer and target is seemingly more important to close the international M&A deal than the institutional distance between acquirer and target country governance. The positive correlations among *Acquirer Governance* and *Target Governance* (0.0304\*\*\*), *Acquirer OPR* and *Target OPR* (0.0116), *Target Governance* and *Acquirer OPR* (0.0407\*\*\*) simply and partially prove the co-evolution among countries through internationalization (Cantwell, Dunning, & Lundan, 2010) and the portability of acquirer's governance and principles (Bris et al., 2008; Ellis et al., 2017). In addition, we reckon that our dependent variable, *Withdrawal Ratio*, has a relatively small mean and many

zeros, which does not provide as an ideal level of variance for our analysis as in other studies like Dikova et al. (2010) and He and Zhang (2018). However, we calculated our *Withdrawal Ratio* at country and also year level in comparison with other studies using aggregated measures of all years.

-----Insert Table 8 here-----

## RESULTS

The results of the population-averaged panel data model are presented in Table 9. Unlike many studies, we do not provide a separate model of only main effects of independent variables. It is inappropriate and biased estimating and concluding the unconditional (main) effect in a separate model if the interaction terms are significant in another model (Brambor, Clark, & Golder, 2006; Carte & Russell, 2003; Dawson, 2014). Thus, we test our main effects and moderation effects together in our one model presented in Table 9. It is interesting to see that neither of the acquirer's country GDP ( $\beta_1 = 0, p > 0.1$ ) nor the target's country GDP ( $\beta_2 = 0, p > 0.1$ ) has a significant effect on the country-pair's pre-deal failure rate. While the acquirer's national culture has no significant effect ( $\beta_3 = -0.0005, p > 0.1$ ), the target's national culture has a negative effect on the closing risk ( $\beta_4 = -0.0011, p < 0.01$ ). When other variables (i.e., *Target Governance*, *Acquirer OPR*, and *Target OPR*) are at zero, *Acquirer Governance* decreases the deal's *Withdrawn Ratio* significantly ( $\beta_5 = -0.0204, p < 0.01$ ). Thus, our hypothesis 1 is supported. *Target Governance* also decreases the *Withdrawn Ratio* significantly ( $\beta_6 = -0.0281, p < 0.01$ ) if other conditions are absent. Acquirer's operational risk severity decreases the pre-deal failure rate significantly ( $\beta_7 = -0.0107, p < 0.010$ ), and the target's operational risk severity does not have a direct or significant marginal effect on the closing risk ( $\beta_8 = -0.0034, p > 0.1$ ) when other conditions are absent. Simply

from the coefficients of interaction terms in Table 9, we can see that the interactions between *Acquirer Governance* and *Target Governance* ( $\beta_9 = -0.0205$ ,  $p < 0.01$ ), *Acquirer Governance* and *Acquirer OPR* ( $\beta_{10} = -0.0072$ ,  $p < 0.05$ ), and interactions between *Acquirer Governance* and *Target OPR* ( $\beta_{11} = 0.0072$ ,  $p < 0.05$ ) are significant. However, we cannot conclude with full confidence that our hypotheses 2, 3, and 4 are supported. Established studies have shown that the coefficients of interaction terms do not tell us the full and precise story of the moderating effects (Kinsley, Noordewier, & Vanden Bergh, 2017; Spiller, Fitzsimons, Lynch, & McClelland, 2013). Following the recommendations from these studies, we conducted a series of comprehensive tests for the moderating effects shown in Figure 4A—6B.

-----Insert Table 9 here-----

The results in Table 9 tells us that *Acquirer Governance* decreases *Withdrawn Ratio* when other conditions are absent ( $\beta_5 = -0.0204$ ,  $p < 0.01$ , which is impossible in real practices) and even decreases *Withdrawal Ratio* more when *Target Governance* is present ( $\beta_9 = -0.0205$ ,  $p < 0.01$ ;  $-0.0204 - 0.0205 = -0.0409$ ). In order to avoid the issue of overstating the moderating effect, we tested the marginal effect of *Acquirer Governance* at various values of *Target Governance* (Kingsley et al., 2017). Figure 4A plots the marginal effect along with the 95% confidence bands over the relevant values of the moderating variable *Target Governance*, which shows that *Acquirer Governance* has a statistically significant and negative effect on the *Withdrawn Ratio* over most of the sample values of *Target Governance* (from roughly -0.6 to 1) rather than all of the sample values. Figure 4B further vividly demonstrates the slope difference when *Target Governance* is low vs. high. When *Target*

*Governance* is low, *Acquirer Governance* increases the *Withdrawn Ratio* while only decreases when *Target Governance* is high.

-----Insert Figure 4A and 4B here-----

Table 9 shows that *Acquirer Governance* decreases *Withdrawal Ratio* more when *Acquirer OPR* is present ( $\beta_{10} = -0.0072$ ,  $p < 0.05$ ;  $-0.0204 - 0.0072 = -0.0276$ ). Again, we plot the marginal effect over the relevant values of the *Acquirer OPR* in Figure 5A and present that *Acquirer Governance* decreases *Withdrawal Ratio* only over some sample values of *Acquirer OPR* (from -1 to 4). Thus, we can conclude that, although the coefficient of the interaction between *Acquirer Governance* and *Acquirer OPR* is significant, *Acquirer Governance* only decreases the deals' closing risk when the acquirer is from a country with high operational risk and actually increases the deals' closing risk if the acquirer is from a country with low operational risk as also shown in Figure 5B interaction plot.

-----Insert Figure 5A and 5B here-----

*Acquirer Governance* decreases the *Withdrawal Ratio* less when *Target OPR* is present ( $\beta_{11} = 0.0072$ ,  $p < 0.05$ ;  $-0.0204 + 0.0072 = -0.0132$ ) than absent ( $\beta_5 = -0.0204$ ,  $p < 0.01$ ) from Table 9. In other words, *Target OPR* weakens the risk mitigation effect of *Acquirer Governance* on the deal completion. However, not all levels of *Target OPR* will weaken the negative effect of *Acquirer Governance*. The conclusion from Table 9 would be plainly biased. Figure 6A proves that *Acquirer Governance*'s negative effect on *Withdrawal Ratio* will be smaller only when the *Target OPR* is lower than 1 versus higher than 1. Figure

6B further demonstrates that *Acquirer Governance* will only decrease the probability of deal withdrawal when *Target OPR* is low rather than high.

-----Insert Figure 6A and 6B here-----

## ROBUSTNESS CHECKS

We mainly conducted two types of robustness checks. First, we tested the model with an alternative dependent variable with a different method. The alternative dependent variable used here is the deal-level withdrawal or completion as the dependent variable instead of the aggregated country-level withdrawn ratio. With this deal-level dependent variable, we chose to use the multilevel method (MLM) for the analysis. Second, we use an alternative measure of acquirer's and target's country governance.

Using the deal-level withdrawal (*Deal Withdrawal*) as the dependent variable, we tested the model with the mixed multilevel method. The sample size remains the same, with 8,008 observations within 1,744 country pairs. As Table 10 shows, the main effects are quite similar and even more significant. The only difference in the set of main effects is that the *Acquirer Cultural Values* shows a negative and significant effect on the *Deal Withdrawal* ( $\beta_3 = -0.0008$ ,  $p < 0.1$ ). The coefficients of the interaction terms *Acquirer Governance* and *Target Governance* ( $\beta_9 = -0.0118$ ,  $p > 0.1$ ), and *Acquirer Governance* and *Acquirer OPR* ( $\beta_{10} = -0.0066$ ,  $p > 0.1$ ) are insignificant in this mixed multilevel model, while the coefficient of the interaction term *Acquirer Governance* and *Target OPR* ( $\beta_9 = 0.0075$ ,  $p < 0.05$ ) is still positive and significant. Again, we plotted the marginal effects to show a more comprehensive picture of the interaction effects in Figure 7, 8, & 9. Figures 7—9 present that H2, 3, & 4 are supported partially as the population-averaged model proves in previous section.

-----Insert Table 10, Figure 7, Figure 8, and Figure 9 here-----

Instead of the six dimensions from the World Governance Indicators we employ scores from the Fraser Institute's World Economic Freedom Index (Aybar & Ficici, 2009; North, 1990; Zhou et al., 2016). The index (EFI) is a scalar variable ranging from 1 (low level of institutional development) to 10 (high level of institutional development). The resulting sample size using EFI become to 7,852 international deals within 1,709 country pairs from 2000 to 2016. The results in Table 11 are quite similar to our original results using the WGI. Using EFI, the direct effect of Acquirer Governance while other conditions are absent is not significant ( $\beta_5 = -0.0095$ ,  $p > 0.1$ ), which is not practically useful or meaningful even if it is significant. The coefficients of the interaction terms between *Acquirer Governance* and *Target Governance* ( $\beta_9 = -0.0103$ ,  $p > 0.1$ ), *Acquirer Governance* and *Target OPR* ( $\beta_{11} = 0.0050$ ,  $p > 0.1$ ) are insignificant in this model using EFI. Thus, we conducted more tests of marginal effects shown in Figure 10, 11, and 12. The marginal plots show that our H2, 3, & 4 are still supported partially at the right direction, but with a smaller range of values. After the two alternative tests, we are confident that our conclusions and findings are robust and consistent.

-----Insert Table 11, Figure 10, Figure 11, and Figure 12 here-----

## DISCUSSION

The main culprit of deal abandonment is information asymmetry. In international M&As, the effect of information asymmetry is elevated because of "liability of foreignness" (i.e., institutional distance and other country-level differences). Through this article, we explore

the reasons of elevated information asymmetry in the lens of institutional environment (or, country governance quality) contingent on operational risk. We extend the information asymmetry argument by combining the institutional theory and finance's contribution on operational risk. Institutional theory provides "rules of the game" while operational risk shows the players' actions.

Instead of testing the effect of institutional distance, we decompose and investigate the direct effect of acquiring country's governance quality and its contingency on selling country's governance quality. Scholars have focused and found that institutional distance decreases the likelihood of deal completion, however, we believe we should carefully check the effect of acquirer's and target's institutional environment separately rather than using difference approach. Our study finds that acquirer's country governance quality increases the chance of deal completion without considering the target's country governance quality. Furthermore, when the target's country governance quality is high, the acquirer increases its likelihood of deal completion even more, and increases less when the target is from a less developed institution. This finding tells us that institutional distance does not always decreases the deal closing risk. Such scenario as high acquiring country governance and low target country governance (i.e., high institutional distance) would increase the deal closing risk.

A firm's country governance quality provides us the information on the local regulations and societal values that the firm is supposed to be following. However, firms are semi-autonomous, and they act on the basis of their own interpretations and incentives (Astley & Van De Ven, 1983). Thus, we investigate the players' actions through their realized operational losses.

First, we find that the deal is less likely to withdrawal when the acquirer is from a country characterized with better institutional environment and higher operational risk. The

acquirer country's level of operational risk helps the acquirer learn to choose and evaluate the target better. When the acquirer is from a country not only with high governance quality but also high operational risk, it boosts its organizational learning from other firms' or their operational loss events, which could be transferred to target selection and evaluation in acquisitions (Barkema & Schijven, 2008). Under such a scenario, the acquirer conducts a more thorough assessment on the target's value, strategic compatibility, and accounting and finance information, which eventually helps them avoid bearing upfront costs and abandoning the deal.

Second, we find that the deal is more likely to complete when the acquirer is under a strong governance system and the target's country has low operational risk. If the target's country has high operational risk, the target is more likely to hide or fabricate its negative information, creating high information asymmetry with the acquirer and obstacles for the acquirer to execute an accurate assessment during private takeover process. In addition, with a high operational risk business environment, the acquirer's shareholders will be more likely to react negatively and push the acquirer to withdrawal the deal.

Our study contributes to the information asymmetry theory by reckoning the effect of organizational behaviors (i.e., operational losses in our context) under various "rules of the game". Institutional theory explains part of information asymmetry with respect of the differences in organizational principles, regulations, shared values, and societal norms. However, these rules do not fully predict individual behaviors or employment practices. By connecting to the realized activities, operational risk informs us the players' actions under various "rules of the game", which together helps the acquirers select and evaluate targets and make strategic decisions.

One limitation of our study is that we focus on country-level factors rather than multi-level sources of explanations on deal abandonment. Despite that the nature of our study

allows us to exploit the dynamics of international M&As with only country-level factors in a long-term window, we could comprehensively examine the influence of multi-level factors including the deal-level characteristics. In order to keep the data format and analysis as panel, we calculate our dependent variable, withdrawal ratio, at country level varying throughout years. Such measurement limits the variance to be explain at deal level, thus relatively preventing us from multi-level analysis. If we use the deal completion at the deal level, the dependent variable would not vary with time, at least would not vary at the same level as the country-level variables, which could shift the theoretical focus of our study.

Our study opens several important avenues for future research by introducing operational risk from finance to international business. After decades of research in IB using cultural distance and institutional distance, we need another country-level variable which is explanatory, complementary, and dynamic. While cultural and institutional studies provide us the variance in regulations and shared values across countries (Hofstede, 1984; Kogut & Singh, 1988; North, 1990; Scott, 1995), operational risk measures the execution and delivery of firm strategies and organizational behaviors under rules of the society. Operational risk has gained more importance because of the development of technology, growth of e-commerce, large-scale M&As, and globalization. Along with the methodological advance and data boom, operational risk could provide us a better tool to quantify and predict country-level uncertainty along with other such country risk dimensions as political risk, financial risk, and economic risk (Howell, 2011), thus studying the corresponding firm-level strategy.

We recommend two major future research directions building on operational risk. First, we can study the effect of operational risk on firm divestment decisions after international M&As. While deal withdrawal represents the M&A failure at pre-completion phase, divestiture could be an indicator of M&A failure after the completion. For post-completion success, people-side integration and management are the key determinant (Shea

& Solomon, 2013). While cultural distance helps us understand the difference of people's values and attitudes, operational risk measures people's conducted behavior and actions. Thus, operational risk could explain part of the integration failure in international M&As.

Second, operational loss events could help us understand the co-evolution between MNEs in the local country and local country's governance development. As the argument of isomorphism gets challenged, the co-evolution theorists investigate how MNEs shift the local economy by enforcing their unique, foreign differences (Cantwell et al., 2010; Kostova et al., 2008). Well-documented operational loss events could inform us the mistakes made by the local subsidiaries, which guides us to learn the influence of MNEs on the evolution of local country governance. In other words, through the lens of operational risk, we could observe how actors exercise judgement, adapt to the local rules, and transform the local system.

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## APPENDIX---TABLES

Table 1: Sample Distribution

Panel A: Sample Distribution by Target Nation				
Target Nation	N	Cultural Distance	Institutional Distance	Mean $\Delta$ Risk
United Kingdom	369	3.22	0.16	0.16 <sup>***</sup>
Canada	298	3.76	0.31	0.24 <sup>***</sup>
Germany	152	7.82	0.18	0.17 <sup>***</sup>
France	109	14.02	-0.07	0.12 <sup>**</sup>
Australia	102	1.39	0.30	0.15 <sup>**</sup>
China	73	20.79	-1.81	0.23 <sup>**</sup>
Netherlands	62	12.44	0.41	0.12 <sup>*</sup>
Israel	58	14.89	-0.73	0.24 <sup>**</sup>
India	52	14.34	-1.54	0.37 <sup>***</sup>
Sweden	45	15.85	0.47	0.08
Switzerland	44	6.95	0.46	0.08
Brazil	41	17.17	-1.30	0.07
Japan	40	18.42	-0.18	0.15
South Korea	39	22.05	-0.59	0.17 <sup>**</sup>
Spain	34	15.59	-0.33	0.13
Italy	33	8.77	-0.66	0.24 <sup>**</sup>
Mexico	32	20.54	-1.39	0.18
Norway	31	14.78	0.44	0.08
Denmark	26	14.62	0.52	0.11
Ireland-Rep	25	6.81	0.22	0.30 <sup>**</sup>
Other	228	16.72	-0.53	0.20 <sup>***</sup>
Total - Grand Mean	1,893	9.87	-0.12	0.18 <sup>***</sup>

Panel B: Sample Distribution by Acquirer's Industry

Acquirer's Industry	N	% Related Target	Mean $\Delta$ Risk
Business Services	398	41.0%	0.20***
Electronic Equipment	223	39.9%	0.09***
Machinery	124	21.8%	0.21***
Computers	104	9.6%	0.10**
Medical Equipment	92	28.3%	0.02
Measuring and Control Equipment	88	12.5%	0.09*
Trading	87	11.5%	0.40***
Pharmaceutical Products	71	50.7%	0.34***
Chemicals	68	27.9%	0.10
Wholesale	49	22.4%	0.15*
Petroleum and Natural Gas	46	54.3%	0.17*
Electrical Equipment	43	14.0%	0.11
Retail	43	27.9%	0.12
Automobiles and Trucks	37	45.9%	0.26**
Consumer Goods	34	32.4%	0.17*
Construction Materials	30	10.0%	0.26**
Steel Works etc	28	21.4%	0.23
Communication	28	25.0%	0.39***
Banking	26	0.0%	0.11
Precious Metals	25	64.0%	0.17
Others	249	37.8%	0.21***
Total - Grand Mean	1,893	31.6%	0.18***

Panel C: Sample Distribution by Year

Year	N	Total Value (\$mil)	Median Value	Mean $\Delta$ Risk
2000	205	41,385.20	44.06	0.33***
2002	124	18,111.58	30.00	0.35***
2003	119	35,985.33	28.00	-0.02
2004	163	21,816.90	38.80	0.01
2005	171	33,420.07	32.67	0.02
2006	165	32,895.01	48.41	0.06
2007	164	46,841.33	27.15	0.38***
2008	141	36,315.04	36.80	0.64***
2009	88	24,018.80	35.04	-0.30***
2010	122	31,255.21	71.43	0.03
2011	140	43,816.64	57.95	0.61***
2012	140	48,374.15	59.72	-0.15***
2013	121	29,108.87	72.00	0.10**
2014	30	6,048.86	73.92	0.29***
Total - Grand Mean	1,893	449,392.99	41.70	0.18***

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

Table 2 Descriptive Statistics and Correlation Matrix

Panel A: Pairwise Correlations																
Model Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. $\Delta$ Risk	1.00	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2. Risk (T <sub>-120</sub> , T <sub>-1</sub> )	-0.29***	1.00	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3. $\Delta$ VIX Index (T <sub>0</sub> , T <sub>120</sub> )	0.59***	-0.17***	1.00	.	.	.	.	.	.	.	.	.	.	.	.	.
4. $\Delta$ AAI Sentiment (T <sub>0</sub> , T <sub>120</sub> )	-0.11***	0.03	-0.12***	1.00	.	.	.	.	.	.	.	.	.	.	.	.
5. Merger Wave Dummy	-0.04*	-0.21***	0.05**	-0.02	1.00	.	.	.	.	.	.	.	.	.	.	.
6. Recession Dummy	0.01	0.24***	0.04*	0.10***	-0.38***	1.00	.	.	.	.	.	.	.	.	.	.
7. % Paid in Cash	0.01	-0.04	0.01	0.04	0.01	-0.01	1.00	.	.	.	.	.	.	.	.	.
8. Price/Book Ratio	-0.05**	-0.03	-0.08***	0.04*	0.02	-0.04*	0.02	1.00	.	.	.	.	.	.	.	.
9. Total Debt/Total Assets	0.08***	-0.12***	0.05**	-0.03	0.02	-0.01	0.11***	0.12***	1.00	.	.	.	.	.	.	.
10. Relative Deal Size	0.04*	0.01	-0.02	0.00	-0.03	0.00	-0.18***	-0.10***	0.04	1.00	.	.	.	.	.	.
11. % of Shares Acquired	-0.02	0.00	0.00	0.06**	-0.02	-0.01	-0.11***	0.02	-0.18***	0.13***	1.00	.	.	.	.	.
12. Prior Acquisition Experience	0.01	0.01	0.05**	-0.01	0.00	0.10***	0.08***	-0.08***	0.26***	-0.12***	-0.20***	1.00	.	.	.	.
13. Industry Relatedness	0.01	0.00	-0.03	0.06***	-0.04*	0.05**	-0.08***	0.08***	-0.06***	0.01	-0.01	-0.08***	1.00	.	.	.
14. Cultural Distance	0.00	0.00	0.01	-0.02	0.00	0.02	0.03	0.04	0.10***	-0.08***	-0.25***	0.15***	0.04	1.00	.	.
15. Absolute Inst. Distance	0.02	-0.06**	0.00	0.00	0.00	0.02	0.01	0.00	0.12***	-0.08***	-0.24***	0.11***	0.06**	0.59***	1.00	.
16. Upstream / Downstream	-0.02	0.01	-0.02	0.02	-0.04*	0.01	-0.02	-0.03	-0.15***	0.11***	0.26***	-0.14***	-0.02	-0.74***	-0.62***	1.00

Panel B: Descriptive Statistics																
Model Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
Mean	0.180	0.228	0.331	-0.005	0.750	0.185	93.322	3.126	0.496	0.079	86.497	2.269	0.316	9.870	0.481	0.671
5 <sup>th</sup> Percentile	-0.534	0.076	-8.391	-0.137	0.000	0.000	47.945	0.732	0.151	0.000	10.522	0.000	0.000	1.392	0.054	0.000
Median	0.035	0.192	-0.575	-0.002	1.000	0.000	100.000	2.309	0.490	0.022	100.00	1.000	0.000	7.818	0.321	1.000
95 <sup>th</sup> Percentile	1.496	0.494	11.599	0.118	1.000	1.000	100.000	7.888	0.900	0.322	100.00	9.000	1.000	22.050	1.744	1.000
SD	0.622	0.141	6.621	0.078	0.433	0.389	18.268	3.176	0.215	0.184	28.370	4.845	0.465	6.711	0.497	0.470
N	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893	1,893

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10

Table 3 Multivariate Regression Analysis

DV: $\Delta$ Risk	(1) Base Model	(2) Main Effects	(3) IR $\times$ CD	(4) IR $\times$ ID	(5) CD $\times$ ID
Constant	0.481*** (7.582)	0.478*** (6.534)	0.487*** (6.990)	0.473*** (6.582)	0.478*** (6.522)
Risk (T-120, T-1)	-0.941*** (-6.293)	-1.313*** (-10.738)	-1.326*** (-10.667)	-1.316*** (-10.870)	-1.317*** (-10.511)
$\Delta$ VIX	0.052*** (16.619)	0.051*** (16.313)	0.051*** (16.277)	0.051*** (16.157)	0.051*** (16.430)
$\Delta$ Sentiment	-0.357*** (-3.970)	-0.295*** (-3.339)	-0.288*** (-3.146)	-0.297*** (-3.240)	-0.293*** (-3.308)
Merger Wave Dummy	-0.165*** (-3.122)	.	.	.	.
Recession Dummy	0.003 (0.099)	.	.	.	.
% Paid in Cash	0.000 (0.430)	0.000 (-0.387)	0.000 (-0.516)	0.000 (-0.357)	0.000 (-0.345)
Price/Book Ratio	-0.001 (-0.190)	-0.002 (-0.427)	-0.002 (-0.595)	-0.002 (-0.571)	-0.001 (-0.324)
Total Debt/Total Assets	0.071 (1.094)	0.020 (0.359)	0.022 (0.406)	0.020 (0.353)	0.017 (0.285)
Relative Deal Size	0.188* (1.788)	0.153 (1.439)	0.151 (1.432)	0.155 (1.443)	0.155 (1.459)
% of Shares Acquired	-0.001 (-1.053)	0.000 (-0.450)	0.000 (-0.427)	0.000 (-0.362)	0.000 (-0.358)
Prior M&A Experience	-0.003* (-1.820)	0.001 (0.598)	0.001 (0.489)	0.001 (0.576)	0.001 (0.723)
Industry Relatedness (IR) <i>(H1)</i>	.	0.050*** (3.130)	0.051*** (3.233)	0.054*** (3.653)	0.047** (2.830)
Cultural Distance (CD) <i>(H2)</i>	.	-0.001 (-0.468)	0.003 (1.355)	-0.001 (-0.371)	-0.001 (-0.443)
Inst. Distance Downstream (ID <sub>D</sub> ) <i>(H3)</i>	.	-0.008 (-0.326)	-0.004 (-0.177)	0.050 (1.568)	0.026 (0.433)
Inst. Distance Upstream (ID <sub>U</sub> ) <i>(H4)</i>	.	-0.046 (-0.649)	-0.062 (-0.841)	0.087 (1.165)	-0.066 (-0.944)
IR $\times$ CD <i>(H5)</i>	.	.	-0.010*** (-4.295)	.	.
IR $\times$ ID <sub>D</sub> <i>(H6)</i>	.	.	.	-0.177*** (-2.998)	.
IR $\times$ ID <sub>U</sub> <i>(H7)</i>	.	.	.	-0.401** (-2.401)	.
CD $\times$ ID <sub>D</sub> <i>(H8)</i>	.	.	.	.	-0.004 (-0.522)
CD $\times$ ID <sub>U</sub> <i>(H9)</i>	.	.	.	.	-0.041* (-2.050)
Year Fixed Effects	No	Yes	Yes	Yes	Yes
Observations	1,893	1,893	1,893	1,893	1,893
R-squared	0.408	0.452	0.454	0.455	0.453
Adj. R-squared	0.404	0.447	0.449	0.450	0.448
Mean VIF	1.116	1.174	1.230	1.269	1.801

This table presents OLS regression results of the effects of Industry Relatedness (IR), Cultural Distance (CD), and Institutional Distance (ID) on Systematic Risk Changes ( $\Delta$ Risk) surrounding cross-border M&As. The t statistics based on robust standard errors clustered by industry are reported in brackets.

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

Table 4 Robustness Tests

	DV: $\Delta$ Risk; ID: EFI			DV: $\Delta$ Altman Z-Score			Sample: Serial acquirers		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	IR $\times$ CD	IR $\times$ ID	CD $\times$ ID	IR $\times$ CD	IR $\times$ ID	CD $\times$ ID	IR $\times$ CD	IR $\times$ ID	CD $\times$ ID
Constant	0.092***	0.090***	0.096***	-1.269***	-1.188***	-1.256***	0.521***	0.500***	0.512***
IR (H1)	0.004	0.003	0.005	-0.092	-0.007	-0.094	0.031	0.028	0.020
CD (H2)	0.000	0.000	-0.001**	-0.004	0.001	-0.001	0.002	-0.001	-0.001
ID <sub>D</sub> (H3)	0.007	0.017**	0.020***	0.214*	0.021	-0.133	0.025	0.084**	0.027
ID <sub>U</sub> (H4)	0.012	0.014	-0.021	-0.535**	-0.652*	-0.545**	0.053	0.169	0.054
IR $\times$ CD (H5)	-0.002**	.	.	0.015*	.	.	-0.010***	.	.
IR $\times$ ID <sub>D</sub> (H6)	.	-0.031***	.	.	0.511*	.	.	-0.215***	.
IR $\times$ ID <sub>U</sub> (H7)	.	-0.015	.	.	1.718***	.	.	-0.304	.
CD $\times$ ID <sub>D</sub> (H8)	.	.	-0.001**	.	.	0.045*	.	.	0.000
CD $\times$ ID <sub>U</sub> (H9)	.	.	-0.009***	.	.	-0.022	.	.	-0.040***
Controls: Base Model	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,893	1,893	1,893	1,535	1,535	1,535	1,099	1,099	1,099
Adj. R-squared	0.533	0.534	0.533	0.126	0.075	0.126	0.488	0.489	0.486
Mean VIF	1.337	1.403	1.860	1.254	1.298	1.811	1.289	1.320	1.815
	Sample: Excl. Financials			Sample: Excl. United Kingdom			Sample: Excl. Canada		
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	IR $\times$ CD	IR $\times$ ID	CD $\times$ ID	IR $\times$ CD	IR $\times$ ID	CD $\times$ ID	IR $\times$ CD	IR $\times$ ID	CD $\times$ ID
Constant	0.475***	0.459***	0.463***	0.515***	0.505***	0.500***	0.454***	0.439***	0.450***
IR (H1)	0.055***	0.057***	0.051***	0.024	0.018	0.012	0.060***	0.043***	0.041**
CD (H2)	0.004**	0.000	0.000	0.000	-0.002	-0.001	0.005*	0.001	0.000
ID <sub>D</sub> (H3)	-0.008	0.050	0.037	-0.001	0.053	0.021	-0.010	0.044	0.016
ID <sub>U</sub> (H4)	-0.071	0.056	-0.070	-0.124	-0.085	-0.052	-0.119	0.047	-0.091
IR $\times$ CD (H5)	-0.011***	.	.	-0.006**	.	.	-0.011***	.	.
IR $\times$ ID <sub>D</sub> (H6)	.	-0.180**	.	.	-0.172***	.	.	-0.179**	.
IR $\times$ ID <sub>U</sub> (H7)	.	-0.325*	.	.	-0.087	.	.	-0.462**	.
CD $\times$ ID <sub>D</sub> (H8)	.	.	-0.006	.	.	-0.003	.	.	-0.003
CD $\times$ ID <sub>U</sub> (H9)	.	.	-0.035*	.	.	-0.044**	.	.	-0.037*
Controls: Base Model	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,771	1,771	1,771	1,524	1,524	1,524	1,595	1,595	1,595
Adj. R-squared	0.447	0.447	0.445	0.435	0.437	0.435	0.462	0.463	0.459
Mean VIF	1.221	1.266	1.766	1.243	1.281	1.821	1.244	1.278	1.819

This table presents OLS regression results of the effects of Industry Relatedness (IR), Cultural Distance (CD) and Downstream - Upstream Institutional Distance (ID<sub>D</sub> - ID<sub>U</sub>) on acquirer systematic risk changes around cross-border M&As. Robust standard errors (not reported) were clustered by industry. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5 Managerial Relevance of Empirical Results

Panel A: Risk Implications of Empirical Results						
	Scenario	Industry Relatedness (IR)	Cultural Distance (CD)	Institutional Distance (ID)		
Risk-Mitigating Scenarios	#1	High	High	.		
	#2	High	.	High		
	#3	Low	Low	.		
	#4	Low	.	Low		
	#5	.	High	High		
	#6	.	Low	Low		
Risk-Increasing Scenarios	#7	High	Low	.		
	#8	High	.	Low		
	#9	Low	High	.		
	#10	Low	.	High		
	#11	.	High	Low		
	#12	.	Low	High		
Panel B: Illustrative Example Scenarios						
Acquirer Industry:	Pre-packaged Software					
Acquirer SIC:	7372					
Acquirer Nation:	USA					
	Scenario	Target Industry	Target Nation	SIC	CD	ID
Risk-Mitigating Scenarios	#1	Pre-packaged Software	South Korea	7372	22.05	.
	#2	Pre-packaged Software	China	7372	.	-1.806
	#3	Computer Peripheral Equipment	Canada	3577	3.76	.
	#4	Computer Peripheral Equipment	Belgium	3577	.	0.029
	#5	.	Indonesia	.	21.84	-2.267
	#6	.	United Kingdom	.	3.22	0.158
Risk-Increasing Scenarios	#7	Pre-packaged Software	Canada	7372	3.76	.
	#8	Pre-packaged Software	Belgium	7372	.	0.029
	#9	Computer Peripheral Equipment	South Korea	3577	22.05	.
	#10	Computer Peripheral Equipment	China	3577	.	-1.806
	#11	.	Portugal	.	22.90	-0.128
	#12	.	South Africa	.	6.92	-1.007

Table 6 Classification of Operational Loss Events According to the BCBS

<i>Event-Type Category (Level 1)</i>	<i>Definition</i>	<i>Categories (Level 2)</i>	<i>Activity Examples (Level 3)</i>	<i>Incident Examples from global data</i>
Internal Fraud	Losses due to acts of fraud involving at least one internal party	Unauthorized activity	Conducting unauthorized transaction; Mismarking of position (intentional);	In May 1998, Kia Motors Corp, a South Korean automobile manufacturing firm, reported that it had realized a loss of \$37M due to embezzlement committed by its former chairman, Kim Sun-hong. Kim was accused of embezzling the funds between 1994 and 1997 and using them to purchase Kia stocks in order to defend his managerial control. An investigation revealed that Kim had used company funds to bribe and lobby politicians in order to obtain bank loans to keep the company afloat. He was arrested in the course of a government inquiry conducted in the wake of the financial crisis.
		Theft and Fraud	Theft / extortion / embezzlement/ robbery; Misappropriation of assets; Account take-over; Tax non-compliance; Bribes / kickback; Insider trading (not on firm's account);	
External Fraud	Losses due to acts of fraud involving a third party	Theft and Fraud	Theft / robbery; Forgery; Check kiting;	In May 2006, Mitsubishi UFJ Trust and Banking Corp, a financial institution and subsidiary of Mitsubishi UFJ Financial Group Inc, reported that it lost approximately \$20.11M (2.24B JPY) in pension assets for corporate clients due to financial statement falsifications made by Seibu Railway Corp.
		Systems Security	Hacking damage; Theft of information;	

Employment Practices and Workplace Safety	Losses arising from acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims, or from diversity / discrimination events	Employee Relations	Compensation, benefit, termination issues; Organized labor activity;	In August 2015, Target Corp, a US retail company, reported that it would pay \$2.8M to the US Equal Employment Opportunity Commission (EEOC) to settle allegations of hiring discrimination. The EEOC's investigation found that Target used three employment assessments during its hiring process that disproportionately eliminated applicants for exempt-level professional jobs based on race and sex. The assessments were not based on business necessity or sufficiently job-related, so they violated the Civil Rights Act of 1964. The company also required applicants to undergo an assessment by a psychologist during the hiring process. The Americans with Disabilities Act prohibited employers from requiring job applicants to submit to medical examinations before they were offered employment.
		Safe Environment	General liability; Employee health and safety rules; Workers compensation;	
		Diversity and Discrimination	All discrimination types	
Clients, Products, and Business Practices	Losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients or from the nature or design of a product	Suitability, Disclosure, and Fiduciary	Fiduciary breaches / guidelines violations; Suitability / disclosure issues; Retail customer disclosure violations; Breach of privacy; Aggressive sales; Account churning; Misuse of confidential information;	In April 2017, Hertz Corp, a US vehicle rental company and subsidiary of Hertz Global Holdings Inc, reported that two subsidiaries were fined \$.93M (1.25M CAD) by Canada's Competition Bureau for misleading advertising. Beginning in 2009, Hertz Canada Ltd and Dollar Thrifty Automotive Group Canada Inc (Dollar Thrifty Canada) advertised car rental prices in Canada on their websites, mobile applications, emails, and promotional materials. However, those prices did not include certain mandatory fees that increased the advertised prices by up to 57 percent. Furthermore, the companies advertised discounts that could not be applied to the mandatory fees. As a result, the companies advertised prices that were not
		Improper Business or Market Practices	Antitrust; Improper trade / market practices; Unlicensed activity;	
		Product Flaws	Product defects;	

			Model errors;	actually available to consumers. The Competition Bureau also found that Hertz Canada and Dollar Thrifty Canada combined the fees with actual taxes and used descriptions that made it seem as if governments and authorized agencies required them to charge the fees. In reality, the companies used the fees to reduce their business expenses.
		Selection, Sponsorship, and Exposure	Failure to investigate client per guidelines	
		Advisory Activities	Disputes over performance of advisory activities	
Damage to Physical Assets	Losses arising from damage to physical assets from natural disaster or other events	Disaster and other events	Natural disaster loses; Human losses from external sources (terrorism or vandalism); Environmental degradation / hazardous material release;	In September 2013, Shell Oil Co, a US oil company and subsidiary of Royal Dutch Shell PLC, reported that it would pay \$1.1M (1.16M EUR) to the US Environmental Protection Agency (EPA) for violations of the Clean Air Act. The EPA named two Shell Oil subsidiaries in its order, Shell Offshore Inc and Shell Gulf of Mexico Inc. The companies were accused of violating their Clean Air Act permits issued for oil and gas exploration drilling in the Chukchi and Beaufort Seas near the North Slope of Alaska.
Business Disruption and System Failure	Losses arising from disruption of business or system failure	Systems	Hardware; Software; Telecommunications; Utility outage / disruptions	In August 2013, Amazon.com Inc, a US online retailer, reported that it lost an estimated \$4.72M in sales due to an outage. For about 40 minutes on August 19, 2013, users were unable to access the retailer's website to manage their accounts, search for products or pay for products. A review of the company's web history indicated that its Amazon Flexible Payments Service and Amazon Management Console had increased API error rates.

Table 7 Sample Distributions

Panel A: Sample Distribution by Acquirer Nation			
Acquirer Nation	# of Total Deals	# of Withdrawn Deals	Operational Risk Severity (\$ million)
United States	6720	997	57.46
United Kingdom	4216	563	1694.90
Canada	2967	711	735.62
Hong Kong	2677	921	3668.85
Japan	1532	357	1118.97
Singapore	1502	341	3185.84
Australia	1418	325	406.46
China	1272	427	1591.46
France	1059	138	4599.71
Germany	896	109	57411.69
Netherlands	825	105	4338.72
South Korea	598	192	971.76
Switzerland	563	102	7526.03
Sweden	540	65	2296.02
Spain	517	51	9986.44
Italy	515	76	8558.22
India	503	112	796.93
Ireland	449	47	561.43
Malaysia	401	97	382.12
Belgium	297	35	3240.24
Others	3,205	558	86,949.91
<b>TOTAL</b>	<b>32,672</b>	<b>6,329</b>	<b>200,078.79</b>

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Panel B: Sample Distribution by Target Nation

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Target Nation	# of Total Deals	# of Withdrawn Deals	Operational Risk Severity (\$ million)
United States	5774	946	41.7081
China	3216	1137	2449.347
United Kingdom	2673	370	1052.385
Canada	2207	413	545.0497
Australia	2111	425	442.2594
India	1224	239	1585.514
Germany	1206	158	61027.23
France	1137	108	4032.034
Hong Kong	1134	379	3044.019
South Korea	706	167	1069.199
Singapore	656	167	2866.624
Spain	639	60	7425.597
Brazil	636	84	3703.808
Italy	627	93	7598.494
Japan	578	74	447.2743
Netherlands	526	65	2203.309
Indonesia	491	129	8238.501
Russia	457	102	7193.611
Sweden	368	36	1620.078
Switzerland	349	62	4826.858
Others	5,957	1,115	105,053
<b>TOTAL</b>	<b>32,672</b>	<b>6,329</b>	<b>226,466</b>

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Panel C: Sample Distribution by Year

Year	# of Total Deals	# of Withdrawn Deals	Withdrawal Ratio (%)	Acquirer Operational Risk Severity (\$ million)	Target Operational Risk Severity (\$ million)
1996	678	92	13.57%	8338.83	8253.38
1998	1594	199	12.48%	14851.23	15606.07
2000	1848	296	16.02%	2973.46	4089.27
2002	1040	186	17.88%	2082.84	5120.03
2003	1226	219	17.86%	16565.16	18487.27
2004	1737	340	19.57%	6909.41	11734.79
2005	1936	316	16.32%	8211.88	7739.66
2006	2390	488	20.42%	8678.77	12090.97
2007	3173	608	19.16%	10016.72	20393.02
2008	2504	514	20.53%	17327.22	13214.79
2009	1745	389	22.29%	4794.95	11180.27
2010	2145	429	20.00%	3086.13	3543.85
2011	2123	423	19.92%	30026.19	18401.31
2012	1890	382	20.21%	3038.76	4089.51
2013	1543	314	20.35%	1917.02	1765.48
2014	1754	311	17.73%	2326.77	3110.16
2015	1665	329	19.76%	2998.49	3630.31
2016	1681	494	29.39%	55934.97	64015.41
TOTAL	32,672	6,329	19.08% (mean)	200,078.79	226,465.54

Panel D: Sample Distribution by Country Pairs (Target Nation and Acquirer Nation)

Target Nation & Acquirer Nation	# of Total Deals	# of Withdrawn Deals	Withdrawal Ratio (%)	Acquirer Operational Risk Severity (\$ million)	Target Operational Risk Severity (\$ million)
United States & Canada	1728	350	20.25%	44.67	1.61
China & Hong Kong	1659	659	39.72%	217.38	162.12
Canada & United States	1279	209	16.34%	1.61	44.67
United States & United Kingdom	1199	98	8.17%	59.00	1.61
United Kingdom & United States	1082	108	9.98%	1.61	59.00
Australia & United States	452	76	16.81%	1.61	28.65
India & United States	440	72	16.36%	1.45	127.79
China & United States	425	101	23.76%	1.61	162.12
Hong Kong & China	394	146	37.06%	162.12	217.38
Australia & United Kingdom	359	66	18.38%	59.00	28.65
United States & Australia	358	55	15.36%	28.65	1.61
United States & Japan	346	55	15.90%	55.24	1.61
Germany & United States	322	26	8.07%	1.53	4005.88
France & United States	306	21	6.86%	1.61	373.38
China & Singapore	284	102	35.92%	245.87	132.77
Germany & United Kingdom	270	39	14.44%	53.54	4005.88
France & United Kingdom	259	26	10.04%	59.00	373.38
United States & France	215	24	11.16%	373.38	1.61
Brazil & United States	203	20	9.85%	1.30	265.31
South Korea & United States	201	61	30.35%	1.61	103.62
Other pairs	20,891	4,015	-	198,706.99	216,366.87
TOTAL	32,672	6,329	17.98%(mean)	200,078.79	226,465.54

Table 8 Descriptive Statistics and Correlation Matrix

Panel A: Pairwise Correlations									
Model Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Withdrawal Ratio	1								
2. Acquirer GDP	0.0046	1							
3. Target GDP	-0.0088	-0.0853***	1						
4. Acquirer Cultural Values	-0.0068	0.2499***	-0.025**	1					
5. Target Cultural Values	-0.0435***	-0.0343***	0.1994***	0.0359***	1				
6. Target Operational Risk	-0.0177	0.0354***	-0.4009***	0.0504***	-0.0586***	1			
7. Acquirer Operational Risk	-0.054***	-0.4698***	0.0433**	-0.1033***	0.0496***	0.0116	1		
8. Acquirer Country Governance	-0.0563***	-0.0055	-0.0554***	-0.1595***	0.0107	0.0689***	-0.0273**	1	
9. Target Country Governance	-0.0771***	-0.0143	0.1258***	-0.0242**	-0.0308***	-0.1172***	0.0407***	0.0304***	1

Panel B: Descriptive Statistics									
Model Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
Mean	0.185	2,510,000	1,980,000	54.99	54.81	-0.07	-0.08	0.04	0.08
5 <sup>th</sup> Percentile	0	127,000	57,784.5	34.00	37.50	-3.40	-3.30	-1.52	-1.34
50 <sup>th</sup> Percentile	0	1,020,000	705,000	56.25	56.25	-0.10	-0.15	0.28	0.41
95 <sup>th</sup> Percentile	1	13,900,000	11,500,000	71.75	71.25	3.46	3.33	0.74	1.07
Sd	0.315	3,940,000	3,500,000	10.64	10.72	1.83	1.78	0.70	0.85
N	8,008	8,008	8,008	8,008	8,008	8,008	8,008	8,008	8,008

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

Table 9 Population-Averaged Model Results

<b>DV: Withdrawal Ratio</b>		Estimates
Constant		0.2755*** (9.66)
Acquirer GDP		0.0000 (-1.60)
Target GDP		0.0000 (-0.23)
Acquirer Cultural Values		-0.0005 (-1.27)
Target Cultural Values		-0.0011*** (-2.90)
Acquirer Governance	(H1)	-0.0204*** (-3.41)
Target Governance		-0.0281*** (-5.62)
Acquirer OPR		-0.0107*** (-4.55)
Target OPR		-0.0034 (-1.49)
Acquirer Governance * Target Governance	(H2)	-0.0205*** (-2.87)
Acquirer Governance * Acquirer OPR	(H3)	-0.0072** (-2.21)
Acquirer Governance * Target OPR	(H4)	0.0072** (2.33)
Observations		8,008
Number of country-pairs		1,744

This table presents population-averaged (generalized estimating equation) panel regression results of the effects of Acquirer operational risk (OPR), Target OPR, Acquirer Institutional Development, and Target Institutional Development on the country-pair (Target Nation and Acquirer Nation)'s withdrawn ratio per year from 1996 to 2016 surrounding cross-border M&As. The t statistics based on robust standard errors clustered by the country pair are reported in brackets.

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

Table 10 Multilevel Method Results

<b>DV: Deal Withdrawal</b>		Estimates
Constant		0.2677*** (5.70)
Acquirer GDP		0.0000 (-0.54)
Target GDP		0.0000 (0.77)
Acquirer Cultural Values		-0.0008* (-1.89)
Target Cultural Values		-0.0013*** (-3.21)
Acquirer Governance	(H1)	-0.0207*** (-2.94)
Target Governance		-0.0291*** (-5.14)
Acquirer OPR		-0.0094*** (-3.17)
Target OPR		-0.0014 (-0.51)
Acquirer Governance * Target Governance	(H2)	-0.0118 (-1.49)
Acquirer Governance * Acquirer OPR	(H3)	-0.0066 (-1.60)
Acquirer Governance * Target OPR	(H4)	0.0075** (2.03)
Year Fixed Effects (1996-2016)		Yes
Observations		8,008
Number of country-pairs		1,744

This table presents multilevel regression results of the effects of country-level variables such as Acquirer operational risk (OPR), Target OPR, Acquirer Institutional Development, and Target Institutional Development on the deal-level dependent variable deal withdrawal from 1996 to 2016 surrounding cross-border M&As. The t statistics based on robust standard errors clustered by the country pair are reported in brackets.

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

Table 11 Population-Averaged Model Results using EFI

<b>DV: Withdrawal Ratio</b>		Estimates
Constant		0.2752*** (8.73)
Acquirer GDP		0.0000 (-1.23)
Target GDP		0.0000 (-0.38)
Acquirer Cultural Values		-0.0005 (-1.26)
Target Cultural Values		-0.0011** (-2.55)
Acquirer Governance	(H1)	-0.0095 (-1.40)
Target Governance		-0.0117** (-1.98)
Acquirer OPR		-0.0105*** (-4.19)
Target OPR		-0.0037 (-1.57)
Acquirer Governance * Target Governance	(H2)	-0.0103 (-1.23)
Acquirer Governance * Acquirer OPR	(H3)	-0.0065* (-1.95)
Acquirer Governance * Target OPR	(H4)	0.0050 (1.49)
Year Fixed Effects (2000-2016)		Yes
Observations		7,852
Number of country-pairs		1,709

This table presents population-averaged model results of the effects of country-level variables such as Acquirer operational risk (OPR), Target OPR, Acquirer Institutional Development, and Target Institutional Development on the country-level dependent variable withdrawn ratio from 2000 to 2016 surrounding cross-border M&As. The t statistics based on robust standard errors clustered by the country pair are reported in brackets.

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

## APPENDIX--FIGURES

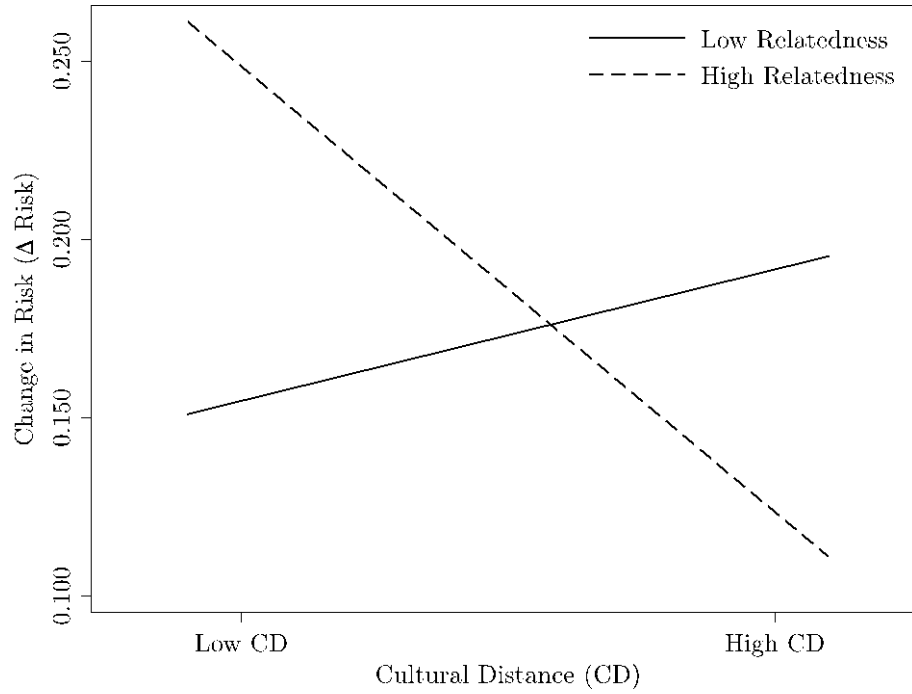


Figure 1 Interaction Effects of Industry Relatedness and Cultural Distance

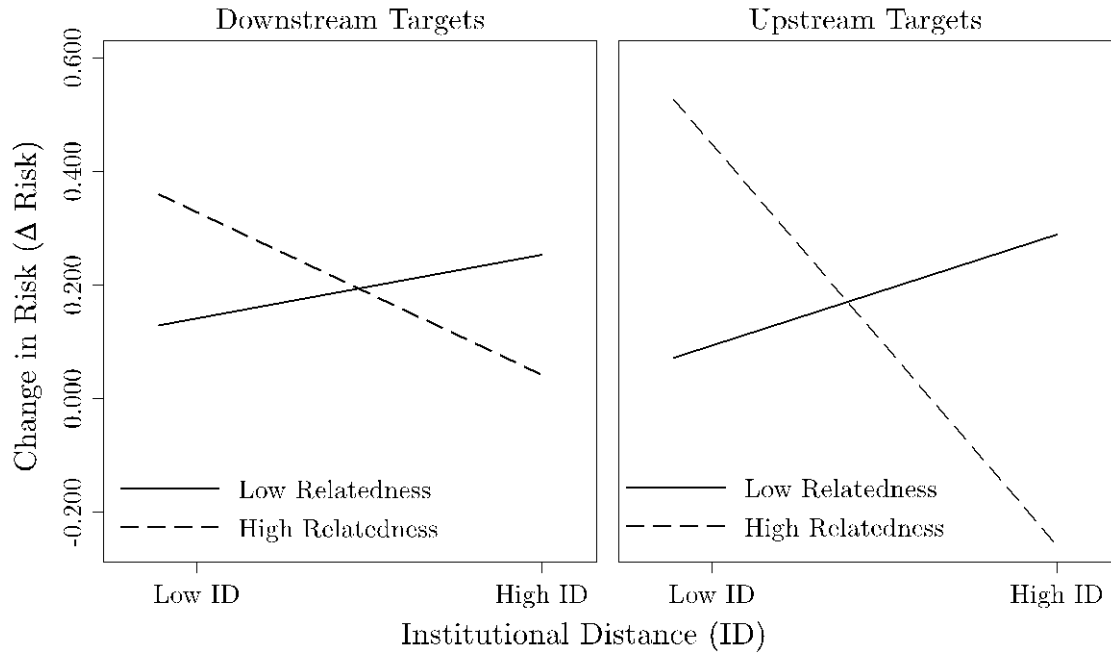


Figure 2 Interaction Effects of Industry Relatedness and Institutional Distance

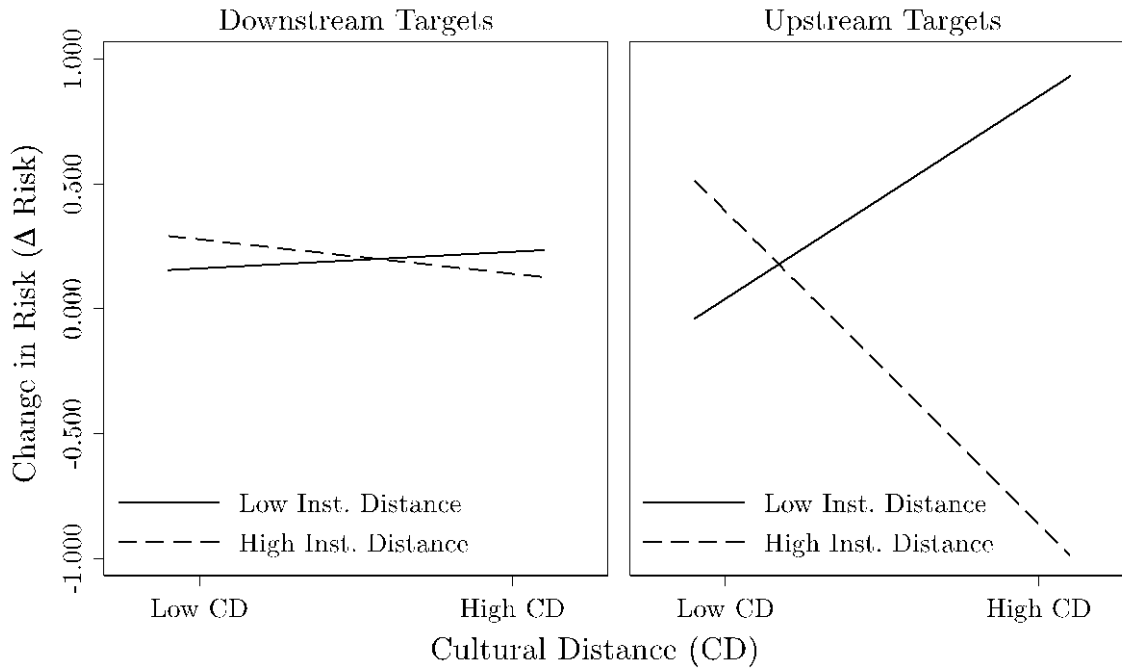


Figure 3 Interaction Effects of Institutional Distance and Cultural Distance

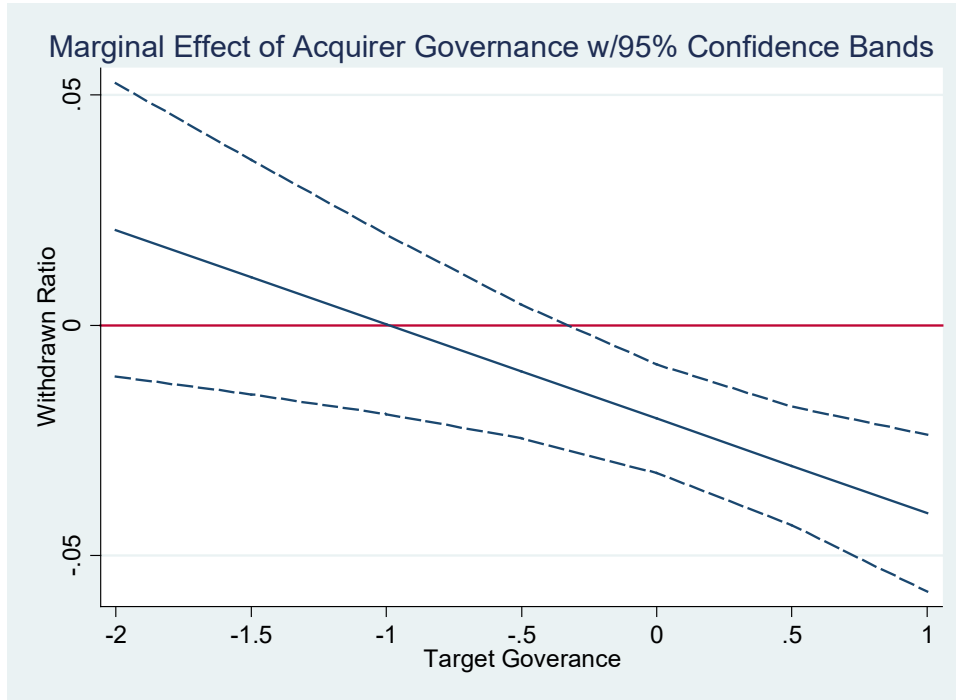


Figure 4A Marginal Effect of Acquirer Governance at Target Governance

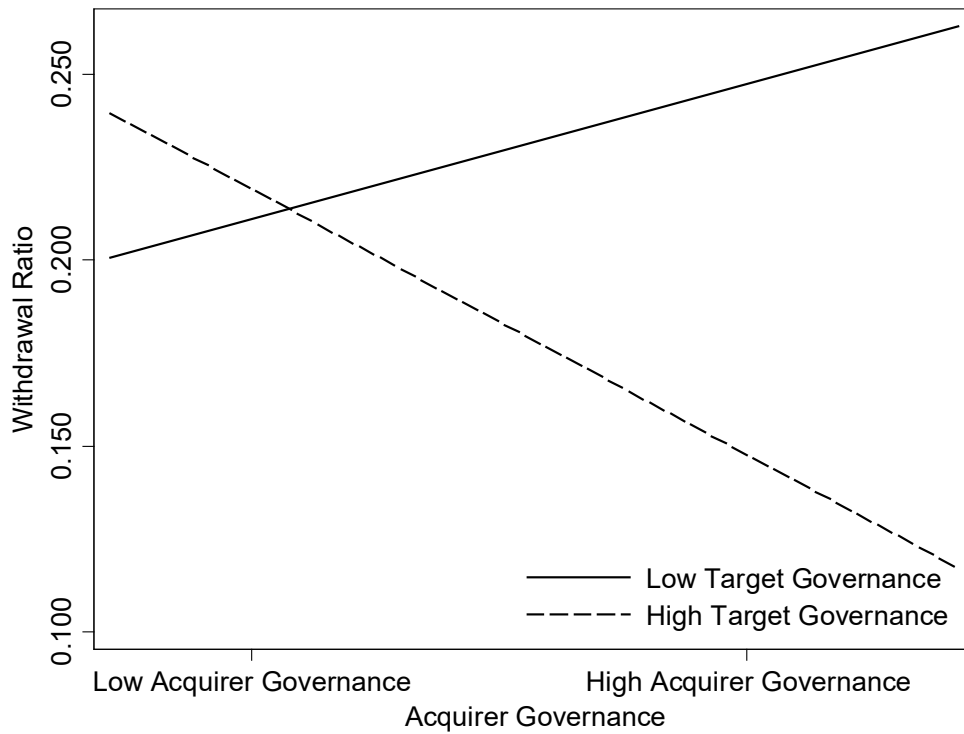


Figure 4B Interaction Plot of Acquirer Governance and Target Governance

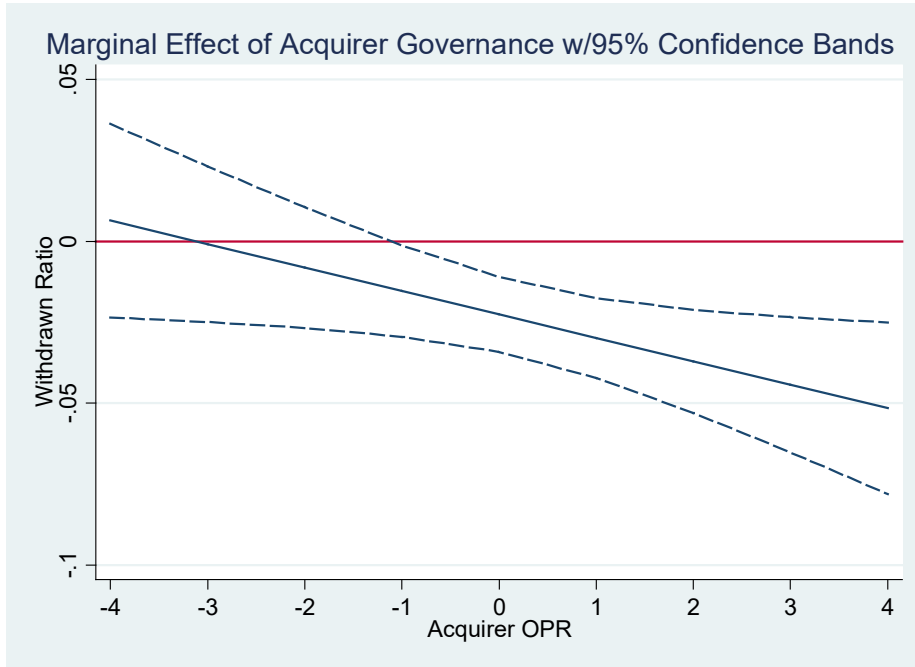


Figure 5A Marginal Effect of Acquirer Governance at Acquirer OPR

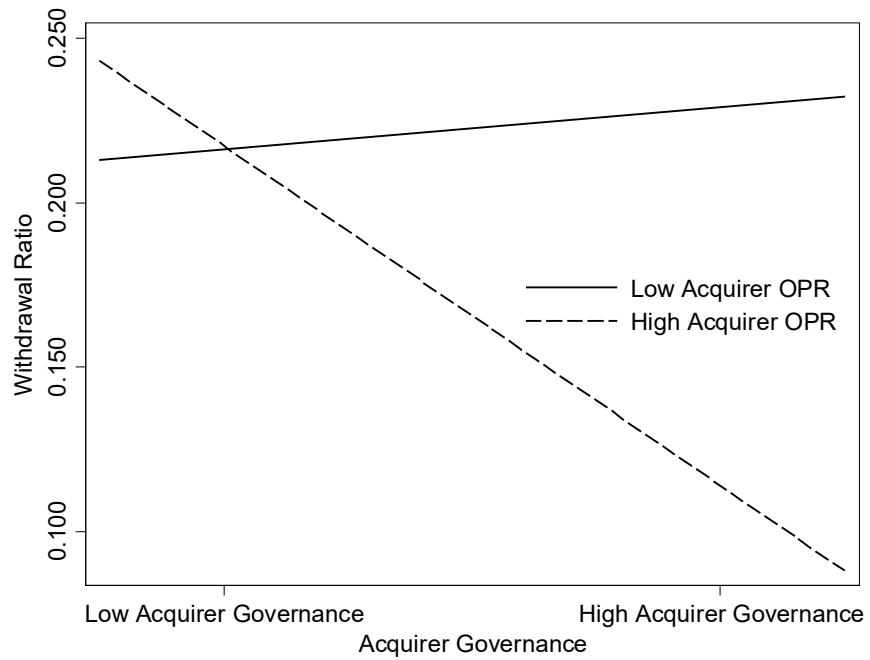


Figure 5B Interaction Effect of Acquirer Governance and Acquirer OPR

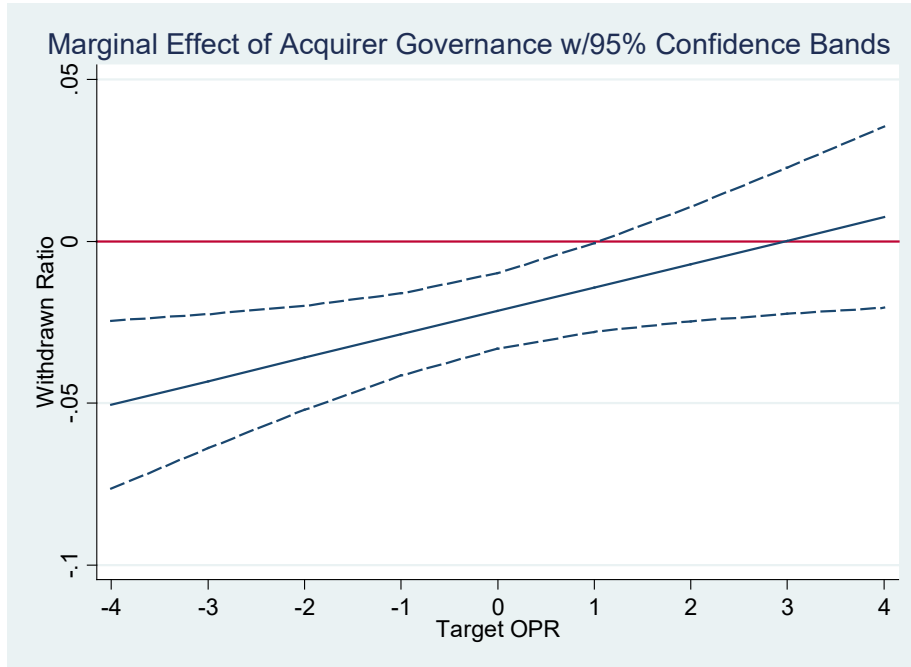


Figure 6A Marginal Effect of Acquirer Governance at Target OPR

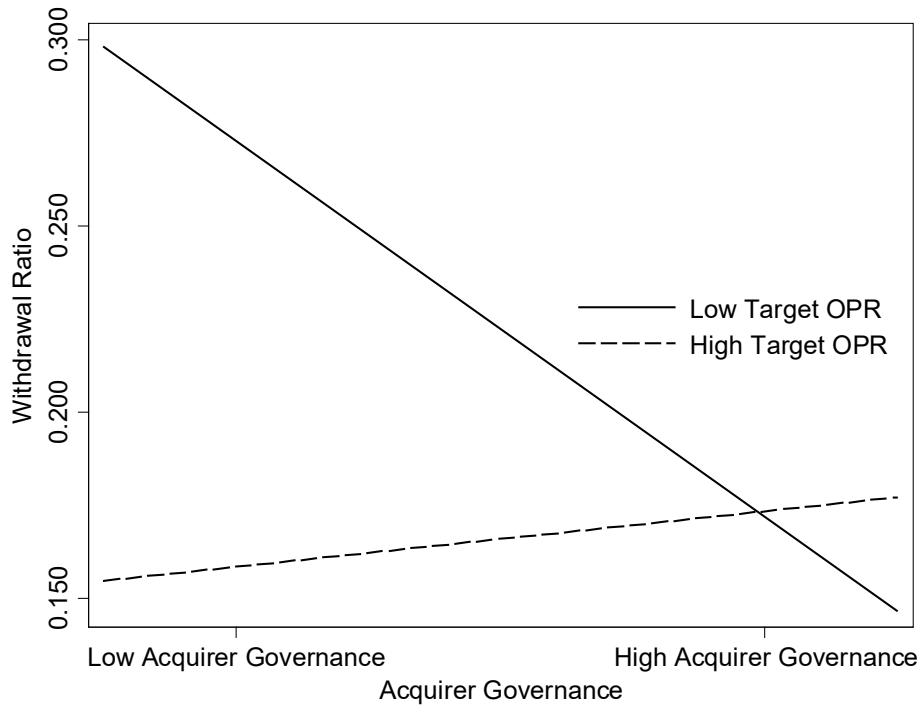


Figure 6B Interaction Effect of Acquirer Governance and Target OPR

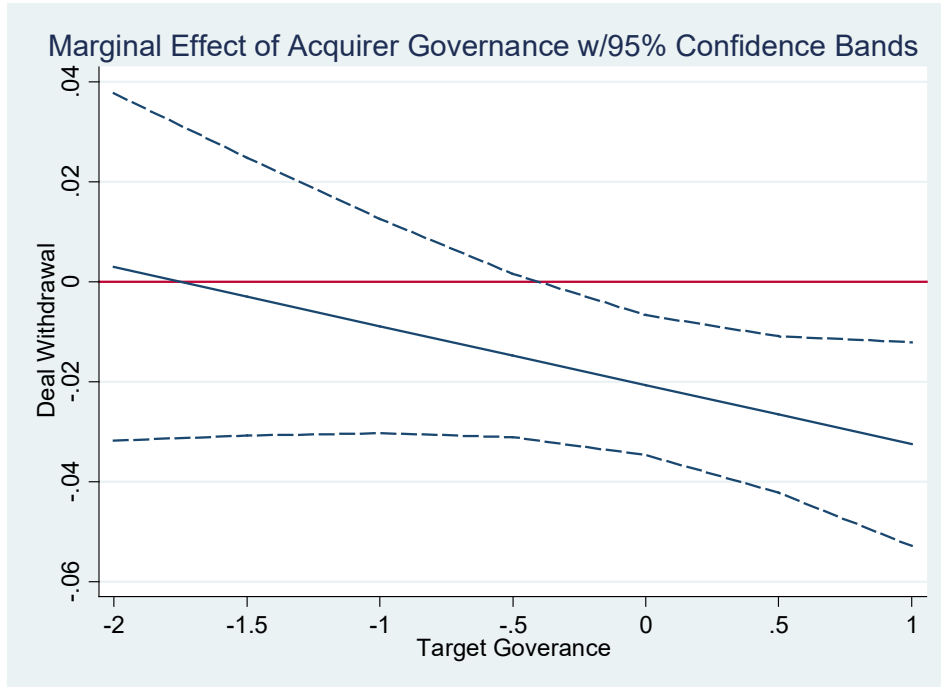


Figure 7 Marginal Effect of Acquirer Governance at Target Governance Using MLM

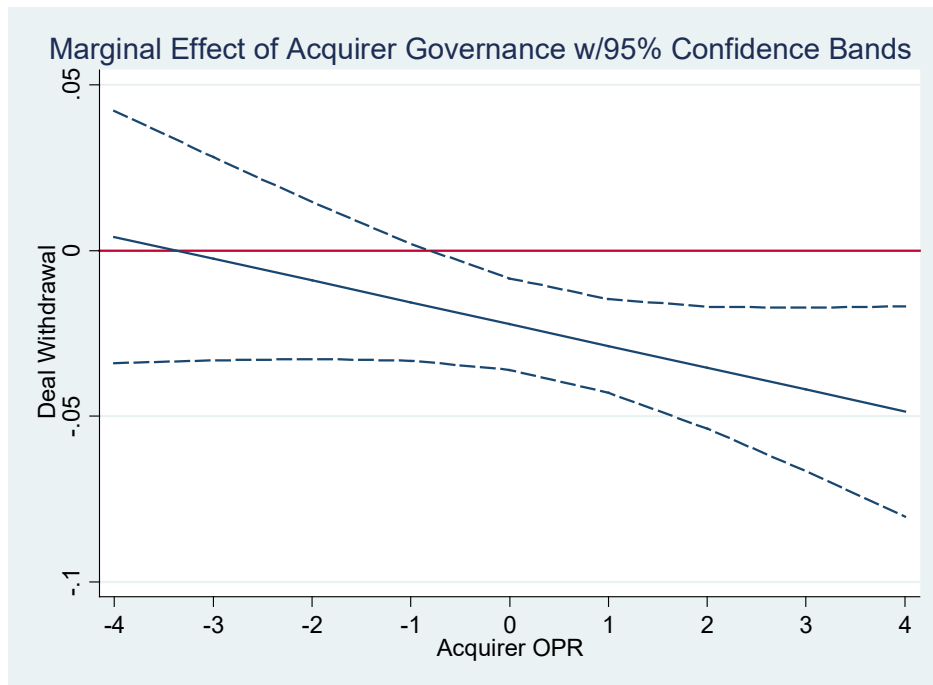


Figure 8 Marginal Effect of Acquirer Governance at Acquirer OPR Using MLM

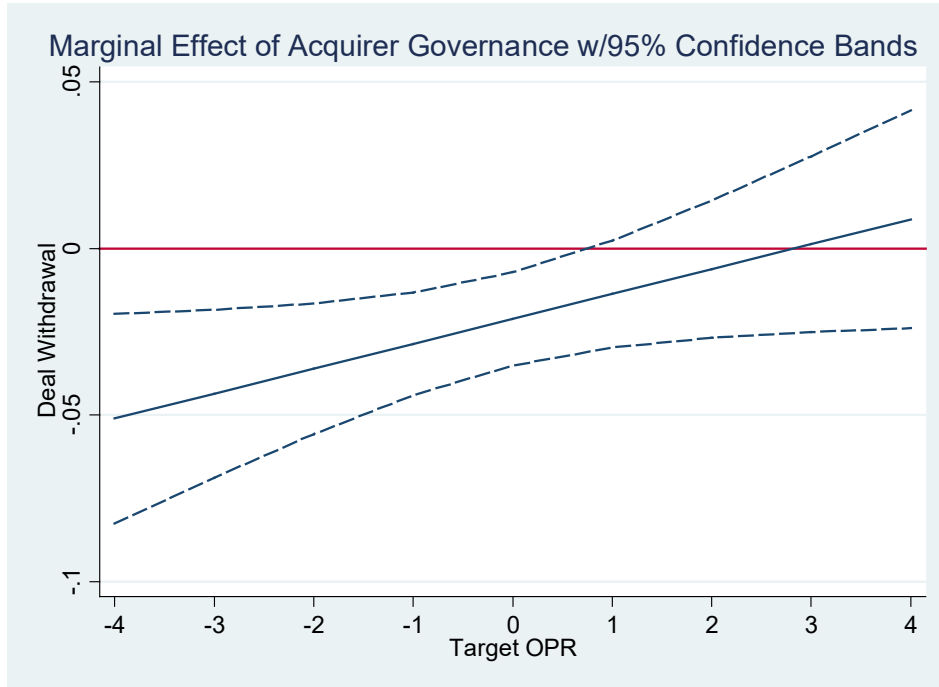


Figure 9 Marginal Effect of Acquirer Governance at Target OPR Using MLM

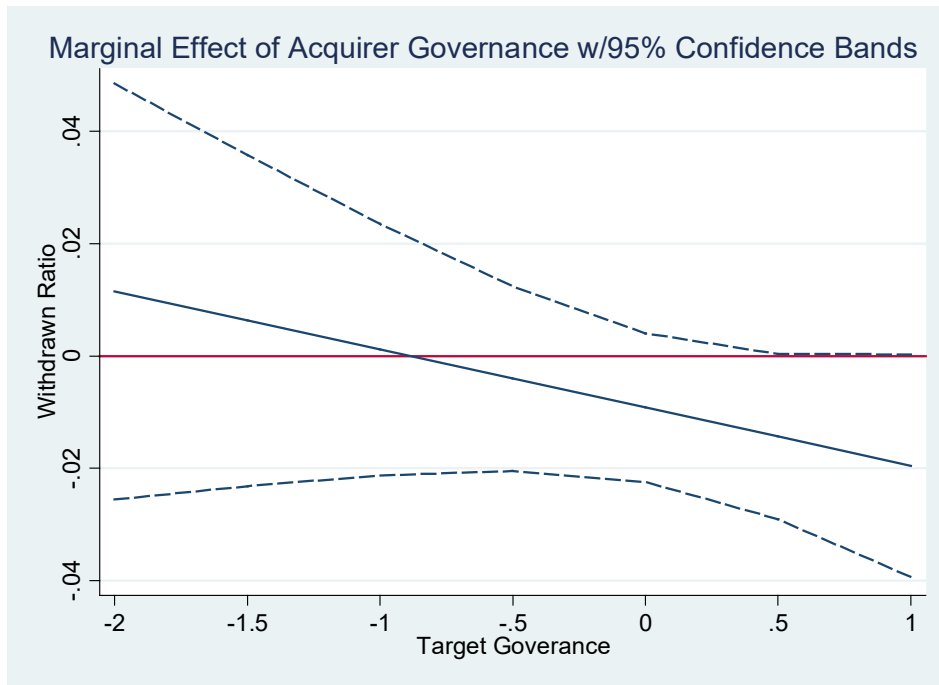


Figure 10 Marginal Effect of Acquirer Governance at Target Governance using EFI

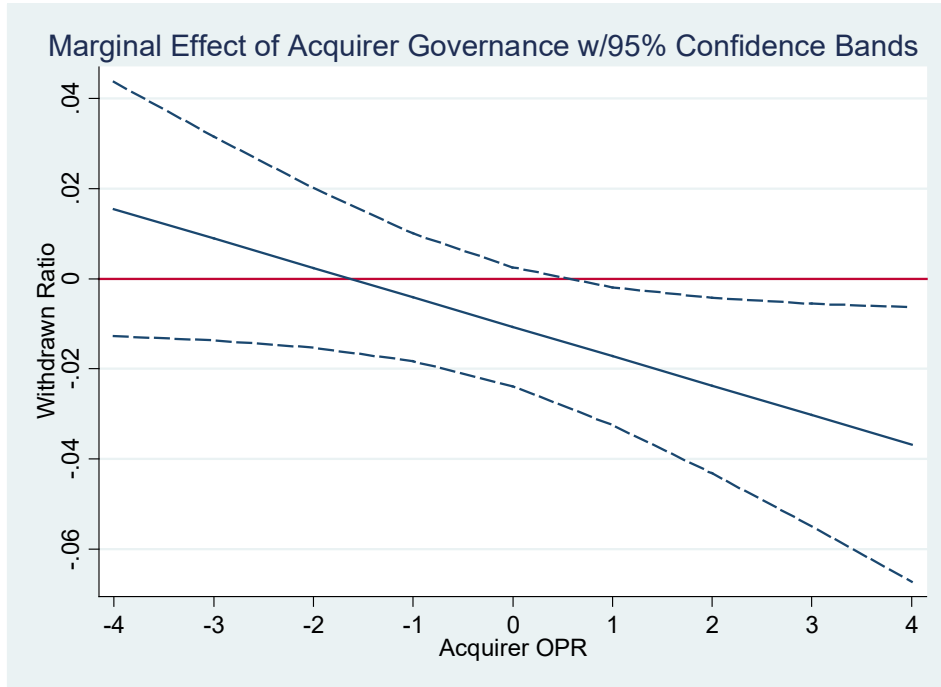


Figure 11 Marginal Effect of Acquirer Governance at Acquirer OPR using EFI

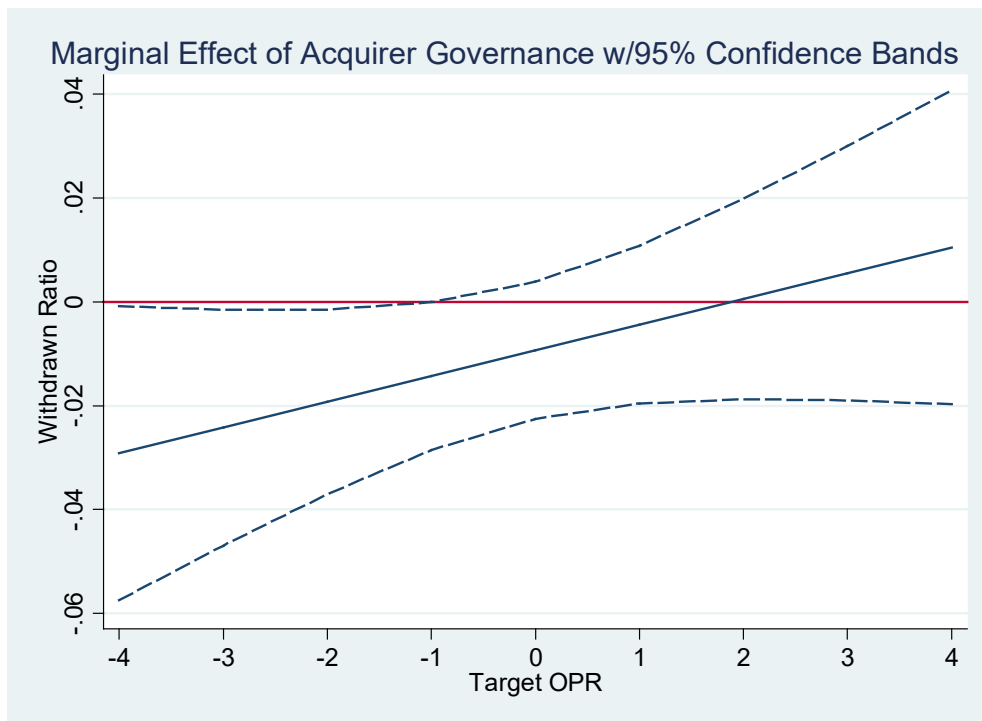


Figure 12 Marginal Effect of Acquirer Governance at Target OPR using EFI