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Portability of firm corporate governance and industry competition in M&As

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Statement of integrity

I, Tanveer Hussain, hereby declare that this dissertation is the outcome of my research work. I also verify that I did not use plagiarism or falsification of findings in my work. Further, I declare that I attentively consider the Code of Ethical Conduct of our esteemed institute.

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Dedication

I dedicate this work to my son “Muhammad Haadi” who is the motivation of my life. Since his birth, I have been enjoying every single moment of my life. His existence always pushes me to work hard to give him a bright future.

Resumo

Esta dissertação investiga o papel da qualidade da governança empresarial e da concorrência setorial no mercado de fusões e aquisições. Primeiro, investigamos se a qualidade da governança empresarial da empresa compradora é transferível para a empresa-alvo, em resultado de uma aquisição, e se essa transferência afeta a rendibilidade da empresa compradora (licitante) na data do anúncio. Os resultados indicam que as rendibilidades anormais acumuladas do licitante são maiores em negócios em que a qualidade da governança do licitante excede a da empresa-alvo, sugerindo um efeito de avaliação positivo da portabilidade de governança empresarial do licitante para a empresa-alvo. Em segundo lugar, examinamos se o efeito da portabilidade se traduz em maior governança da empresa combinada após a aquisição. Os resultados indicam que quando a qualidade da governança do licitante é melhor do que a da empresa-alvo, antes da aquisição, a qualidade da governança empresarial ex-post da empresa combinada é melhor do que a média ponderada ex-ante de cada empresa. A independência do conselho de administração, a independência do comitê de auditoria, a remuneração dos executivos ligada à performance e a proteção dos acionistas minoritários servem como canais para aprimorar a governança da empresa combinada após a aquisição. Terceiro, analisamos se a concorrência de fusões e aquisições na indústria-alvo afeta as rendibilidades anormais no momento do anúncio da aquisição. Descobrimos que a competição da indústria não afeta as rendibilidades anormais acumuladas combinadas das empresas envolvidas na aquisição. Contudo, afeta negativamente (positivamente) afeta as rendibilidades do licitante (empresa-alvo), separadamente. Os resultados indicam que as empresas compradoras pagam a mais para vencer as ofertasde outros potencias compradores quando a competição no mercado de fusões e aquisições é mais forte no setor de atividade da empresa-alvo. Os resultados passam vários testes de robustez, incluindo medidas alternativas das variáveis-chave, diferentes especificações dos modelos econométricos e diferentes períodos de amostra.

Palavras-chave: Governança empresarial; fusões e aquisições; portabilidade de governança empresarial; Rendibilidades anormais acumuladas em fusões e aquisições; concorrência no mercado de fusões e aquisições.

Abstract

The dissertation examines the role of corporate governance and industry competition in mergers and acquisitions. First, we investigate whether firm-level corporate governance is transferable from the bidder to target and affects the bidder announcement returns. We find that the bidder's cumulative abnormal returns (CARs) are higher in deals where the bidder's governance quality exceeds the target's, suggesting a positive valuation effect of the firm governance portability from the bidder to the target. Second, we examine if the portability effect translates into higher governance of the combined firm post acquisition. We find that when the quality of the bidder governance is better than the target before the acquisition, the ex-post corporate governance quality of the combined firm is better than the ex-ante weighted average governance of each firm. Board independence, audit committee independence, stock compensation, and minority shareholders protection serve as channels to enhance combined firm's governance post-acquisition. Third, we analyze whether takeover competition in the target industry affects announcement returns. We find that the industry competition does not affect the combined CARs of the bidder and target, while negatively (positively) affects the bidder (target) CARs, indicating that the bidders overpay to win other raiders' bids when facing stronger takeover competition in the target's industry. Our results pass several robustness tests, including alternative measures of the key variables, different model specifications, and different sample periods.

Keywords: Firm corporate governance; mergers and acquisitions; corporate governance portability; M&A announcement returns; takeover competition.

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1. Introduction

Corporate resources should always be allocated to activities that facilitate their best possible use. Mergers and acquisitions (henceforth, M&As) assist this procedure by reallocating control over the firm's assets. However, frictions such as agency conflicts, information asymmetries, and transaction costs may impede the efficient transmission of control (Cremers and Nair, 2005; Jensen and Meckling, 1976). Prior research on the portability of bidder's corporate governance to targets has focused more on country-level corporate governance (related to the protection of shareholder rights and quality of their institutions) in cross-border mergers and acquisition (Bris and Cabolis, 2008; Masulis, Wang, and Xie, 2007; Rossi and Volpin, 2004). This fast-growing strand of literature reports that bidders from better-governed countries can export their governance standards when they acquire targets from countries with poor governance standards. Given the relevance of portability of corporate governance in cross-border M&As, the main conclusion is that a higher difference in the quality of country-level governance between the bidder and target is positively associated with announcement returns (Ellis, Moeller, Schlingemann, and Stulz, 2017; Martynova and Renneboog, 2008). Despite the evidence on portability of country governance, we know very little about the transfer of bidder's higher firm-level.

Corporate governance changes widely across countries and firms (Starks and Wei, 2013). Several provisions in investor protection laws and other country-level governance mechanisms cannot be binding as companies have the freedom in their company charters to either adopt or reject certain provisions mentioned in their legal code (Black and Gilson, 1998). The voluntary governance practices (i.e., firm-level governance) are frequently adopted, especially after the financial crisis of 2007-2009 (Alexandridis, Antypas, & Travlos, 2017), and the firms that opt for more rigorous governance practices are rewarded by the capital markets (Chhaochharia and Laeven, 2009). The firms with higher governance standards create value for their firms (Bruno and Claessens, 2010; Aggarwal, Erel, Williamson, and Stulz, 2009). The importance of firm-level governance is well established, and companies from the same or different countries can differ in the degree of firm-level corporate governance.

The benefit of having good firm-level corporate governance permits stockholders to align the interests of managers with their own interests, and this benefit is carried to all investment decisions made by companies, including the decisions regarding mergers and acquisitions. The bidder with higher governance quality can mitigate agency conflicts and transfer its governance when acquiring the target with poor corporate governance. The empirical evidence reveals that bidders have better

governance than the target before the deal announcement. After the deal completion, the bidder will apply its higher governance on the target, and the combined assets will be under better-qualified management. The portability of higher governance standards from the bidder to the target will enable the bidder to manage better target resources, which is a source of synergies. The weaker firm-level corporate governance of the target can be a source of value for M&As rather than a barrier to value creation. We are motivated by the portability theory of Ellis et al. (2017) and examine whether *ceteris paribus*, the higher bidder-target governance gap (i.e., the bidder governance quality is better than the target), is associated with the higher bidder cumulative abnormal returns (CARs) in Chapter 2 and the combined firm's governance quality in Chapter 3.

The first research question examines whether the better firm-level corporate governance is portable from the bidder to the target. In other words, if a firm has better governance than the other before an M&A deal, do the capital markets react positively to the better-governed firms? We use the scores of four governance categories provided by the ASSET4 ESG[1] and compute the bidder-target governance gap as the bidder's index score minus the target's index score. The sample covers both domestic and cross-border majority acquisitions from 15 countries during 2003 and 2016. The results of chapter 2 show that the bidder-target corporate governance gap positively affects the bidder cumulative abnormal returns (CARs), even after controlling for the gap in home country governance of the merging firms, bidder characteristics, deal characteristics, and macro-economic variables. For example, a one standard deviation increase in bidder-target board structure gap increases bidder CARs by 0.75 percentage points (pp), on average. We support the portability theory of corporate governance (Ellis et al., 2017) and suggest that one potential source of higher bidder CARs is the target's better governance quality post-acquisition. The findings reveal that the portability effect is higher in cross-border deals than domestic deals, suggesting the higher firm corporate governance differences across the countries. The results also show that the portability effect is more pronounced in better-governed countries, proposing that firms can opt higher governance standards, but the country must support the enforcement of those standards to be efficient.

While the first question investigates the bidder-target governance gap on the bidder returns, the second question analyzes the portability-induced governance changes by comparing the ex-post combined firm's governance with ex-ante weighted average governance of the bidder and target. Several recent studies (Ellis et al., 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009)

[1] Recently, the ASSET4 ESG updated the data. Using new governance categories and employing principal component analysis to construct the overall governance index, we show that our findings remain unchanged in the Internet Appendix.

argue that the spillover of higher governance standards from the bidder to target enables the latter to adopt the bidder's higher governance standards and, therefore, the combined firm comes under the governance of the bidder. However, these studies do not examine the real changes in the governance of the combined firm stemming from the governance transfer. We fill this gap and show how the pre-deal governance gap between the bidder and target is a source of changing governance of the combined firm. A deal with the positive bidder-target governance gap results in higher combined firm governance in terms of balanced board structure, better compensation policies, minority shareholder protection, and effectiveness of board activities. Among other factors, post-merger integration also depends on the pre-deal governance differences between merging firms (for a review see, Renneboog and Vansteenkiste, 2019), and these differences create potential for governance transfer through M&As. The portability of firm governance translates into governance convergence of the combined firm that is dominated by the higher governance standards of the bidder.

To study the firm corporate governance changes around M&As in chapter 3, we use 837 full takeovers from 2003 to 2015. We find that the post-deal combined firm's governance quality is significantly higher than the pre-deal weighted average governance of the bidder and target when bidders are better-governed than targets before the acquisition. The combined firm's score of board structure index is higher by 4.4 pp, on average, relative to the weighted average board structure index score of the bidder and target. We also observe an increase in the combined firm's board function index, compensation policy index, and shareholder rights. The results support the portability theory and suggest portability-induced changes in the governance quality of the combined firm. We follow the literature to establish the potential channels and show that board independence (Cotter, Shivdasani, and Zenner, 1997), audit committee independence (see Boone, Casares, Karpoff, and Raheja, 2007), stock compensation (Datta, Iskandar-Datta, and Raman, 2001) and equal treatment of minority shareholders (Doidge, Karolyi, and Stulz, 2007) are potential channels through which the combined firm reaches higher governance standards. We further report that the higher bidder-target governance gap positively affects the combined firm's operating performance.

The third research question, addressed in chapter 4, examines the effect of the target's industry competition on announcement returns. The auction process in the takeover market is highly competitive (Liu and Mulherin, 2018) because of competing bidders in the auction (Humphery-Jenner and Powell, 2011; Servaes, 1991; Shams, Gunasekarage, and Colombage, 2013) and competitive takeover markets (Alexandridis, Petmezas, and Travlos, 2010; Rossi and Volpin, 2004; Shams, 2021). The higher competition in M&As produces asymmetric returns for bidder and target shareholders

where targets gain and bidders lose value. The most plausible explanation for this asymmetric distribution is credited to higher premiums paid by bidders to win other riders' bids. In a competitive takeover environment, management teams compete to control firm resources (Aktas, Bodt, and Roll, 2010; Jensen, 1986; Jensen and Ruback, 1983), and bidders engaging in bad deals can become potential targets (Mitchell and Lehn, 1990). The theory of market for corporate control predicts disciplinary pressure on bidder managers (see, for instance, Jensen and Ruback, 1983; Shams and Gunasekarage, 2019), and they look for attractive targets with growth opportunities (Shams and Gunasekarage, 2019). In a dynamic takeover market, bidder managers can be more self-disciplined and carry out value-enhancing deals; however, the outcome can be compromised if they overpay to win the bid. While existing literature examines the effect of competing bidders and country-level takeover competition, the empirical evidence falls short on the role of takeover competition in the target industry. Industries differ in the degree of takeover competition, and it is important to test how the target industry competition affects takeover value and the gains to the bidder and target shareholders. Following the work of Alexandridis, Petmezas, and Travlos (2010), we examine whether, *ceteris paribus*, the industry competition in the takeover market affects combined (both bidder and target), bidder, and target CARs.

Using a sample of 1072 majority control acquisitions from 2003 to 2016, we find that target industry competition does not affect the combined returns of bidders and targets. The effect on target returns is positive while negative for bidder returns. On average, bidder CARs are 0.64 pp lower while target CARs are 3.31 pp higher when target industry competition is one standard deviation higher. The results persist after controlling for country-level competition, deal characteristics, acquirer and target characteristics, and macro-economic variables. Our results suggest that bidders lose and targets gain in a competitive target industry, but the combined returns are close to zero. The results do not support the disciplinary view of takeover competition as the combined CARs are unaffected but support the overpayment argument and suggest that bidders pay aggressively to win the bid. The takeover premium is 1.95 to 3.05 pp higher when competition is one standard deviation higher. The reported negative relation between bidder CARs and industry competition mitigates when the bidders come from countries with higher institutional quality, suggesting a limit above which the bidder should withdraw from the dal.

This dissertation contributes to the existing M&A literature in many ways. First, we contribute to the spillover of corporate governance (Ellis et al., 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009). More importantly, we extend the portability theory of Ellis et al. (2017) and show

that beyond the country-level governance, firm-level governance is also portable from the bidder to the target through the acquisition channel. The bidder-target governance gap positively affects the bidder announcement returns, suggesting a positive valuation effect for bidder shareholders resulting from the portability of firm governance. Second, we show that the portability effect translates into the higher governance of the combined firm that contributes to the literature on corporate governance portability and knowledge transfer in M&As (Hitt, Hoskisson, and Ireland, 1990; Ranft and Lord, 2002). We add further support to the work on post-merger integration (Bresman, Birkinshaw, and Nobel, 1999; Heimeriks, Schijven, and Gates, 2012), governance convergence, and the importance of functional convergence (Goergen and Renneboog, 2008). Third, we contribute to the work on takeover competition (Bradley, Desai, and Kim, 1988; Humphery-Jenner and Powell, 2011; Morck, Shleifer, and Vishny, 1990; Shams, Gunasekarage, and Colombage, 2013). Our results extend the work of Alexandridis, Petmezas, and Travlos (2010) and show that the industry-level takeover competition also has an essential effect on the cumulative abnormal returns beyond the country-level takeover competition.

The remaining of the dissertation are organized as follows. Chapter 2 analyzes the portability of firm corporate governance in mergers and acquisitions. Chapter 3 investigates firm corporate governance changes following mergers and acquisitions. Chapter 4 analyzes the effect of the target's industry competition on announcement returns. Chapter 5 concludes the dissertation.

2 Portability of firm corporate governance in Mergers and Acquisitions

2.1 Introduction

An important stream of the existing literature on the benefits of good corporate governance focuses on the portability of governance standards from bidders to targets (Ellis, Moeller, Schlingemann, and Stulz, 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009). These studies accentuate the idea of "transferability of corporate governance" to illustrate the benefits that acquirer firms, particularly those from countries with better governance standards, achieve after acquiring targets from countries with weaker corporate governance. In short, such benefits are obtained from the enhancements in the target's corporate governance standards post-acquisition. The new institutional environment can better protect shareholder rights and impose more rigorous accounting disclosure requirements, enhancing the target's assets market value under the bidder's management supervision.[2] This chapter examines whether firm corporate governance is portable and affects the bidder announcement returns in mergers and acquisitions.

The extant literature that addresses the corporate governance gap between bidders and targets focuses mainly on country-level differences in their governance standards (Bris and Cabolis, 2008; Masulis, Wang, and Xie, 2007; Rossi and Volpin, 2004). However, within each country, there is still considerable heterogeneity in corporate governance quality at the firm level (Klapper and Love, 2004; Martynova and Renneboog, 2008; Starks and Wei, 2013). Several provisions in investor protection laws and other country-level governance mechanisms may not be binding. Companies have the freedom in their company charters to either adopt or reject specific provisions mentioned in their legal codes (Black and Gilson, 1998). Besides the legally required governance attributes[3], firms can voluntarily adopt more stringent governance practices, which Chhaochharia and Laeven (2009) have shown to be rewarded with higher firm market value.[4]

[2] In an M&A deal characterized by a change in control, the bidder's better governance will be applied to the target's weaker governance (Wang and Xie, 2009).

[3] Aktas, Croci, and Simsir (2016) provide a comprehensive review of the literature on how internal (board of directors, executive compensation) and external (blockholders, takeover market, product market competition, labor market, and financial market) governance mechanisms affect the M&A process and outcomes. Considering internal governance mechanisms, the authors conclude that the board of directors, through its monitoring and advisory roles, lead to more value-enhancing M&As.

[4] For instance, Alexandridis, Antypas, and Travlos (2017) argue that firms improved both mandatory and voluntary corporate governance mechanisms to increase their market value and convey more confidence to the general public in the post-financial crisis period.

As the quality of corporate governance varies across countries and firms, a majority or a full takeover[5] automatically subjects the target firm to the acquirer's governance practices. Targets with weaker governance standards pre-acquisition can benefit post-acquisition from a transfer of good governance practices when acquired by a bidder with better corporate governance quality and, by doing so, uplift its persona of a well-managed firm. Better managed bidders can more effectively scrutinize the target firm as they have better-qualified management. Thus, the portability effect is not merely confined to country-level governance but can also result from a more pervasive shift in firm corporate governance to enhance the acquisition value.

M&A deals provide the appropriate setting to understand the portability of firm-specific governance standards among firms and its economic impact. Previous studies on portability/spillover effects of corporate governance focus on cross-border mergers and acquisitions and country-level governance gaps. In contrast, this work contributes to the literature by analyzing whether firm-level corporate governance attributes are portable from bidders to targets and affect the bidder's value created by the acquisition. In the spirit of the portability theory developed by Ellis et al. (2017), we examine whether, *ceteris paribus*, the bidder's cumulative abnormal returns are higher when the firm-level corporate governance gap between bidder and target is higher (i.e., the better quality of bidder's governance relative to the target). This research adopts an agency perspective of the company and discusses the value creation of M&As from the lens of firm corporate governance.

We measure the corporate governance gap between bidders and targets based on four firm-level governance indices: board structure index, board function index, compensation policy index, and shareholder rights index.[6] Using a sample of 1026 domestic and cross-border deals from 2003 to 2016, we find that the abnormal bidder returns around M&A announcements are significantly higher when the bidder-target corporate governance gap is higher.[7] The results hold after controlling for several firms- and deal-level characteristics, country-level corporate governance gap, and macro-economic variables. Our result supports the idea that corporate governance is portable from the bidder to the target and suggests that one possible source of higher bidder gains from M&As is the improvement in the target's governance standards affected by the change in control. It also echoes the argument of Hartzell, Ofek, and Yermack (2004) that target managers usually do not possess

[5] The takeover value increases due to control of target resources under the bidder's possession, and the bidder uses them efficiently.
[6] We observe considerable cross-sectional variation in governance quality of bidders and targets.
[7] Recently, the ASSET4 ESG updated the data, and our results still hold if we use new categories of corporate governance. The results are shown in the Internet Appendix of Chapter 2.

enough incentives to change their firms' corporate governance voluntarily. This incentive problem is solved in M&As where better-governed bidders make side payments to target managers for giving up control and, therefore, improve the overall quality of the firms' corporate governance.

We next investigate if the uncovered portability effect is higher in cross-border or domestic deals as the empirical evidence reveals a high degree of variation in firm-level governance in cross-border deals (Martynova and Renneboog, 2008). Therefore, we split the sample into domestic and cross-border deals. Our global sample of M&As enables us to analyze the impact of the gap in firm-level governance between bidders and targets in cross-border and domestic deals worldwide. Our results show that the portability effect in cross-border deals is higher than in domestic deals. This result reveals that there is significantly higher variation in firm corporate governance across countries and that the weaker governance of target firms is a source of higher bidder returns.

Further, we examine in which countries[8] the portability effect is more effective and more valued by the market in M&As. It is expected that bidder-target portability will be more appreciated in countries with better country governance, first because in those countries investors value more good governance (Ellis et al., 2017; Klapper and Love, 2004), and second because the good quality of the country institutions helps make the transfer of good governance more effective (Martynova and Renneboog, 2008). We use World Governance Indicators issued by the World Bank and the anti-self-dealing index (ASDI) proposed by Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) to proxy for the country's institutional quality. Following Kaufmann, Kraay, and Mastruzzi (2009), we compute the mean index, named world governance index (WGI), based on six indicators for each country. To identify better-governed countries, we create a binary variable that equals one if the index is above the world median and zero otherwise. We find that the portability effect is more substantial in countries with better country-level corporate governance, proposing that firms can have good governance mechanisms, but the country has to have adequate enforcement for those mechanisms to be efficient.

Despite the voluminous literature on M&As to date, we know very little about the effect of firm-level corporate governance portability from bidders to targets on the value created by bidder firms. We contribute to the literature showing that when bidders with better corporate governance acquire poorly governed targets, the bidder gains are more significant. We extend the portability theory of Ellis et al. (2017) and show that beyond the country-level governance, firm-specific

[8] For instance, Klapper and Love (2004) find that average firm corporate governance is lower in nations having weaker legal systems. Similarly, Doidge, Karolyi, and Stulz (2007) document that, in less developed countries, country characteristics elaborate more of the international corporate governance ratings than firm-level characteristics.

corporate governance can also be transferred through the acquisition channel and improve the management quality of a relatively weaker target firm. Our work also contributes to the M&As literature that relates value-enhancing takeovers with reduced agency costs in the 1980s and 1990s (for example, Bradley, Desai, and Kim, 1988; Loderer and Martin, 1990). Our results show that takeovers of the 2000s and 2010s also create efficiency gains in the same way through firm corporate governance transfers from bidders to targets. Finally, we contribute to the literature of cross-border acquisitions and corporate governance quality (e.g., Ellis et al., 2017; Kim and Ozdemir, 2014; Zattoni, Dedoulis, Leventis, and Ees, 2020) by showing that the portability of firm level corporate governance is amplified when bidders are domiciled in countries with better shareholder protection.

We arrange the remainder of the chapter as follows: Section 2.2 reviews the literature and develops the hypothesis; Section 2.3 describes the data and shows summary statistics; Section 2.4 describes the methodology; Section 2.5 discusses our main results; Section 2.6 presents robustness tests; Section 2.7 shows portability effect in better-governed countries; Section 2.8 concludes.

2.2 Literature review and hypotheses development

The effect of firm corporate governance on M&A outcomes has been previously studied. For example, Cotter, Shivdasani, and Zenner (1997), Datta, Iskandar-Datta, and Raman (2001), Masulis, Wang, and Xie (2007), and Moeller, Schlingemann, and Stulz (2005) with the main results being that bidders with better corporate governance have relatively higher announcement returns and tend to overpay less for their targets. The manager-shareholder incentive-alignment mechanisms exist in companies with better corporate governance and motivate managers to pursue value-creating deals, better estimate the synergies and pay a fairer premium.

If an acquisition of two publicly traded companies is not anticipated, the value created through the deal should be reflected in the announcement returns. The empirical literature shows that, on average, M&As generate wealth as a whole (see, among others, Bradley, Desai, and Kim, 1988; Mulherin and Boone, 2000; Servaes, 1991; Wang and Xie, 2009), although asymmetrically distributed between bidders and targets. Target stockholders tend to capture the largest share of the combined returns (Malatesta, 1983), while bidders typically experience minor gains (Andrade et al., 2001) or even higher losses (Moeller, Schlingemann, and Stulz, 2004).

When the quality of the bidder's corporate governance is better than that of the target, the superior management quality of the first can be exported to the latter. Thus, after the acquisition, the target assets will be under better-qualified management. This transferability (or portability) of firm corporate governance will enable the bidder to manage better target resources, a source of higher

gains. Prior studies on the portability of corporate governance address cross-country differences in shareholder protection rights and country-level institutional quality (Ellis et al., 2017; Martynova and Renneboog, 2008). This fast-growing strand of literature documents that bidders from countries with better corporate governance can export their governance standards when they acquire targets from countries with weaker corporate governance. This portability effect translates into greater takeover returns accruing to M&As where the corporate governance gap between the bidder country and the target country is larger (see, for instance, Bris and Cabolis, 2008; Rossi and Volpin, 2004).

The quality of corporate governance is partially determined by the level of shareholder protection and the country's institutional quality where the firm is domiciled. Nonetheless, there is enough variation in corporate governance quality among firms from the same country (Starks and Wei, 2013). Besides the country-level corporate governance standards, firms implement their monitoring mechanisms of managerial activities with different efficiency degrees. Some recent studies use ASSET4 ESG scores as proxies for firm corporate governance and find that higher governance scores are positively associated with higher market valuation and performance (e.g., Doung, Kang, and Salter, 2015; Guney, Hernandez-perdomo, and Rocco, 2019; Tarmuji, Maelah, and Tarmuji, 2016). We do not find empirical evidence relating to M&A deals (both cross-border and domestic) outcome with the firm-level corporate governance gap between the bidder and the target in the global sample. In this chapter, our purpose is to fill this gap by testing whether the portability of corporate governance enhances the bidder returns. Building upon these ideas, we formulate the main hypothesis of this chapter as follows:

A higher firm corporate governance gap between the bidder and the target (bidder minus target) is associated with higher bidder announcement returns, ceteris paribus.

Throughout this chapter, we explore several variations of the main hypothesis. For instance, we test whether the transfer of corporate governance from bidders to targets are more effective and yield higher returns either in samples of cross-border or domestic acquisitions.

2.3 Data and summary statistics

We use various sources to assemble the panel of companies involved in mergers and acquisitions around the world. The sample of mergers and acquisitions is from Securities Data Corporation (SDC) database. Our sample comprises 649 domestic M&As and 377 cross-border M&As between 2003 and 2016 from 15 countries. Both acquirers and targets are publicly traded companies with stock price data from the Thomson Reuter's DataStream database. Firm-level corporate governance data are from the ASSET4 ESG database. The sample excludes financials (SIC

codes 6000-6999) and utilities (SIC codes 4900-4949). We require that bidders have less than 50% of the target shares before the deal and end up with a controlling position on the target equity post-acquisition.[9] Since a small number of deals can add noise in the analysis, countries with less than five deals during the sample period are dropped.

Table 2.1 shows the country distribution of bidder firms and deals around the world. The most active nations in the international market of mergers and acquisitions are the United States[10], Japan, and Canada. These three countries represent 67% of the global sample of M&As. The United States dominates the takeover market, with 133 bidders involved in 298 (domestic and cross-border) M&A deals. The total number of firms engaged in domestic M&A activity from the leading countries exceeds their cross-border M&As. Our global acquisitions sample shows 591 bidding firms involved in 649 domestic deals and 377 cross-border deals. It is well documented that mergers and acquisitions appear in waves and clusters by industry. We observe the highest dollar value of M&A activity in the year 2005 (see figure 1). The number of M&A deals has been steadily increasing from 2003 to 2005 and reached its peak in 2005, a significant decline in M&A activity during the world crisis in 2008, and a revival in 2009. This trend of M&A deals is similar, as reported by Wang and Xie (2009) and Moeller, Schlingemann, and Stulz (2004).

Table 2.2 shows summary statistics of involved variables, and we find substantial dispersion in our sample for all variables. Panel A of Table 2.2 reports that the average bidder's 5-day cumulative abnormal return is 2.3%, consistent with studies that say that M&As create positive returns for bidder shareholders (Alexandridis, Antypas, and Travlos, 2017; Martynova and Renneboog, 2008). Panel B of Table 2.2 shows the differences in firm corporate governance in four indices. The primary firm corporate governance indices we focus on are the board structure index, board function index, compensation policy index, and shareholder rights index. The differences in these indices can take values from -60 to +76. We report that firm governance differences vary from 47.51 to 53.31 at the median, but their standard deviations are quite large. The bidder governance indices are higher than the target indices, and subsequently, differences in all indices are higher. Panel C of Table 2.2 states that the average bidder's WGI gap is 7.24, while average GDP growth and GDP per capita are 1.93 and 10.66, respectively. Panel D of Table 2.2 presents dummy variables for same-industry deals, deals paid in cash, cross-border deals, and relative size. Mostly, public acquirers pay in cash (55.5%), and the remaining payments in stock (44.5%); almost 37% of acquirers engaged in cross-border deals

[9] We find similar results using 100% ownership acquisitions.
[10] Although the US dominates our sample, the results for portability of firm corporate governance still hold when we drop deals made by the US bidders.

while remaining in domestic deals. Deals among the same industries accounted for 37.8%. The bidder attributes that we consider are leverage, Tobin's Q, size, and stock price run-up. All of them are measured at the end of a year before an acquisition. Panel E of Table 2.2 Presents that mean values for bidder leverage, Tobin's Q, size, run-up are 0.22, 0.53,15.91, 0.005, respectively. The definitions of all variables are in Appendix A and Appendix B.

A concern with the several firm characteristics is that they might be strongly correlated. To check it for our sample, we present the correlation matrix for involved variables in Table 2.3. The first column provides the correlation of the bidder returns with all variables, and the second column shows the correlation of the board structure gap with other variables. Not surprisingly, the board structure gap is strongly correlated with gaps in other firm corporate governance mechanisms. We show that the firm governance gap in our governance indices is positively correlated with the bidder returns.

2.4 Methodology

2.4.1 Cumulative abnormal returns

If an acquisition involving public companies is not anticipated, the deal's value can be captured by the announcement returns. Under our central hypothesis, we postulate that firm governance's portability should have a positive effect on bidder cumulative abnormal returns. We estimate expected returns using the following market model:

$$R_{ijt} = \alpha_{ij} + \beta_{ij} R_{jt} + \varepsilon_{ijt},\ t = -255,\ldots, -25, \quad (1)$$

where R_{ijt} is the daily stock return for bidder firm *i* in country *j*; R_{jt} is the DataStream daily market index return for country *j*; ε_{ijt} is the bidder's excess return. Fama, Fisher, Jensen, and Roll, (1969) standard event study methodology is used to calculate cumulative abnormal returns (as the difference between expected and realized daily returns) for 5 days period (t-2, t+2) around the announcement date. We use the following model to test our hypothesis:

$$\begin{aligned} Bidder\ CAR\ (-2,+2)_{d,t} = {} & \alpha + \beta_1 CG\ GAP_{d,k,t-1} + \beta_2 Country\ controls_{j,t-1} + \\ & \sum \beta_m\ Deal\ \ controls_{d,t} + \sum \beta_n Firm\ controls_{i,t-1} + \\ & \lambda_k + \eta_j + \gamma_t + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where $Bidder\ \ CAR\ (-2,+2)_{d,t}$ is the bidder's cumulative abnormal return around the announcement date of deal *d* at time *t* over the 5-days event window; α is the intercept; $CG\ GAP_{d,j,t-1}$ is the corporate governance score of the bidder's index minus the corporate governance score of the target's index for deal *d*, industry *k*, one year before the deal announcement. $Country\ controls_{j,t-1}$ is a vector of country-specific controls for the country *j* one year prior to the deal and it includes: WGI gap[11], Gross Domestic Product (GDP) growth, and log GDP per capita; $Deal\ \ controls_{d,t}$ is a vector of deal-specific controls for deal *d* and year *t;* $Firm\ controls_{i,t-1}$ is a vector of firm-specific controls for bidder/target firm one year prior to the deal. The deal specific-controls include: payment method, a dummy variable that is equal to one if the deal is paid by cash and zero otherwise; cross-border deal, an indicator variable that equals one for cross-border deals and zero otherwise; same industry deal, a dummy variable that is equal to one if the bidder and the target belong to the same industry and zero otherwise; relative deal size, deal-value scaled by the bidder market value of equity. The firm specific-controls of bidders include leverage, long-term debt divided by total assets; Tobin's q, total assets minus book value of equity plus the market value of equity divided by total assets; size, the log of the book value of total assets; stock price run-up, the sum of abnormal returns using the market model for a window of 90 days up to 20 days before deal announcement. We also add dummies to control for industry, λ_k, country, η_j, and year, γ_t. to control for omitted factors. Further, Fama-French 48 industry categories are used for the bidder's industry fixed effects. Finally, we mitigate the outlier's effect by winsorizing firm-specific controls and bidder CARs at the top and bottom 1% of the distribution.

2.4.2 Corporate governance indices

The key independent variables are based on the corporate governance scores of four firm governance mechanisms: board structure (effective participation of independent directors), board function (guarantee that corporate governance principles are applied), compensation policy (guarantee incentive alignment and independent compensation designs), and shareholder rights (guarantee that minority shareholders are protected). Our choice is driven by the fact that the quality of the bidder's firm corporate governance can be transferred to a target with weaker quality of firm corporate governance. Data on these firm-level governance mechanisms are from the ASSET4 ESG database. This database rates firms on 250 key performance indicators grouped into four major categories of performance: social, corporate governance, environmental, and economic. It allocates a

[11] This is lagged difference in WGI between the bidder and the target countries.

percentage score based on many factors to each of the below-mentioned classes. ASSET4 ESG uses data from the company's regulatory filings and annual reports to calibrate governance scores. This chapter focuses on the corporate governance pillar that measures a firm's processes to ensure that its executives and board members work in their shareholder's best interests. This pillar is divided into the following categories:

(1) Board function – measures a firm's management dedication and effectiveness towards obeying the best corporate governance principles associated with board functions and activities. This indicates a firm's potential to have a useful board by formulating important board committees with assigned responsibilities and tasks.

(2) Board structure – measures a firm's management dedication and effectiveness towards obeying the best corporate governance principles associated with well-balanced membership of the board. It reveals a firm's potential to safeguard the exchange of constructive and critical ideas and an effective decision-making process through an independent, diverse, and experienced board.

(3) Compensation policy – measures a firm's management dedication and effectiveness towards making compensation policies for managers. It elaborates how the managers are compensated both financially and non-financially.

(4) Shareholder rights – measures a firm's management commitment and effectiveness toward defining and protecting the shareholder's rights. It reflects whether the minority shareholders have the same rights as concentrated shareholders or not?

Since our research design is based on firm-level governance's relative strength, we use collective measures to capture the relative quality of each governance mechanism. We use 55 individual governance variables,[12] and each governance variable has a score from 0 (lowest) to 100 (highest). We construct four corporate governance indices[13] based on the categories mentioned above for both bidders and targets. To measure the gap in firm corporate governance between the bidder and the target, we calculate each governance index's lagged average score for both bidder and target at the end of the year before an acquisition. The gap is calculated as the bidder's index minus the target's index. A positive gap means that the bidder has a better quality of corporate governance than the target. The higher the gap, the more efficiently the bidder can use the target's assets to enhance

[12] Definitions of all these individual governance variables are given in Appendix B.

[13] These indices are time-varying and capture a gap in governance quality between bidders and targets. Each governance index is calculated by summing up scores of all governance variables in a category provided by ASSET4 ESG and dividing by the number of variables.

the acquisition's value. Measuring the bidder-target gap in these different dimensions allows us better to understand the scope of corporate governance portability in M&As.

2.4.3 Control variables

We consider three groups of variables associated with bidder returns: country characteristics, deal characteristics, and bidder firm characteristics.[14]

The country characteristics that we control for include bidder-target country governance gap, Gross Domestic Product (GDP) growth, and GDP per capita, all of which are measured one year before the deal announcement. The studies on country-level governance find evidence that a higher difference in country governance between bidders and targets generates positive returns to bidders (Ellis et al., 2017; Martynova and Renneboog, 2008). To control financial development and economic growth, we follow Fauver, Loureiro, and Taboada (2017) and use the log of GDP per capita and GDP growth.

We control the deal-specific characteristics for payment method, cross-border deals, whether the bidder and the target are from the same industry, and relative deal size. It is well established that acquirers earn significantly lower returns when they finance the deal with equity due to the adverse selection problem mentioned by Myers and Majluf (1984). The bidder's cash payment would positively impact announcement returns (Shleifer and Vishny 2002; Graham, Lemmon, and Wolf, 2002), and bidders can earn higher returns when they pay with cash. We classify the same industry acquisition if the bidder and the target share a Fama-French industry. Morck, Shleifer, and Vishny (1990) show that diversifying acquisitions are value-destructive for bidder shareholders and wealth increasing for self-interested managers. The M&As of related businesses can create higher returns due to cost-saving through economies of scale (Masulis, Wang, and Xie, 2007). The studies on diversification discount (Campa and Kedia, 2002; Villalonga, 2004) find that diversifying acquisitions are not necessarily linked with lower firm value, but sometimes they increase firm value. Therefore, the net effect of diversifying acquisitions on bidder CARs is obscure. Some studies show that cross-border deals are value-enhancing for bidder shareholders (see Ellis et al., 2017; Martynova and Renneboog, 2008). We also consider relative deal size as papers by Asquith (1983) and Moeller, Schlingemann, and Stulz (2004) show that the relative deal size positively affects bidder returns.

We control some bidder characteristics, including leverage, Tobin's q, and size, all of them are measured one year prior to the deal announcement. Leverage plays an important governance role

[14] For a review on the determinants of M&As and their wealth effects, see, for example, Martynova and Renneboog (2008) and Jensen and Ruback (1983).

in limiting managerial discretion because higher debt decreases future cash flows (Lang, Stulz, and Walkling, 1991). It provides incentives for managers to increase firm performance to keep their jobs alive (S. C. Gilson, 1990) and is associated with takeover protection (Garvey and Hanka, 1999). The effect of Tobin's q on returns is ambiguous, according to the existing studies. Lang, Stulz, and Walkling (1989) show that bidder returns increase with the bidder's Tobin's q and decrease with the target's Tobin's q, while Wang and Xie (2009) do not find any relation between bidder returns and Tobin's q of the bidder. Moeller, Schlingemann, and Stulz (2004) document the bidder size's negative effect on the returns as larger bidders pay higher premiums. We finally control for the pre-deal bidder stock price run-up using an event window of 90-day to 20-day before the deal's announcement.

2.5 Portability of firm corporate governance

2.5.1 Main results

To test this chapter's hypothesis, we estimate cross-sectional regressions of bidder CARs on differences in four governance indices and a set of control variables. The results are reported in Table 2.4. In Models 1 to 8, we show the effect of portability of firm corporate governance on bidder CARs using the bidder-target gap in four firm-level governance indices: the difference in board structure index, the difference in board function index, the difference in compensation policy index, and the difference in shareholder rights index, respectively. As shown in Table 2.3, differences in firm-level governance mechanisms are highly correlated, so that multicollinearity can make it difficult to examine the impact of firm governance in multiple regressions. To tackle this problem, we estimate regressions with the difference in one firm governance index at a time to gauge the strength of the relation between bidder announcement returns and firm corporate governance indices. We first include only the bidder-target governance gap as the key explanatory variables. The estimated coefficients on the governance gap indices are positive and statistically significant. The results are also economically significant. A one standard deviation increase in the bidder-target governance gap in terms of board structure, board function, compensation policy, shareholder rights increase bidder announcement returns by 0.75[15], 0.84, 0.77, 0.74 percentage points (pp), respectively.

In Models 5 to 8 of Table 2.4, we add all independent variables and estimate the effect of firm corporate governance gap on bidder CARs. The parameter estimates show that the bidder-target corporate governance gaps positively and significantly affect the bidder announcement returns. The

[15] Considering Model (1) in Table 2.4, the coefficient on governance gap in board structure is 0.0003 (t-statistic of 4.025) with 25.255 standard deviation. So, an increase of one standard deviation in board structure gap increases bidder CARs by 0.75 percentage points (Standard deviation × β coefficient × 100 = 25.255 × 0.0003 × 100 = 0.75).

economic magnitudes of the portability effect are almost same as reported previously. The results are consistent with our hypothesis - for all of the firm governance indices, we find that the bidder CARs increase in firms with a higher firm corporate governance gap. It means that the gains to bidder shareholders are higher in M&As when the target firm has poor governance. It further suggests that one potential source of higher bidder gains from M&As is improving the target's governance standards due to change in control. Based on our results, we argue that higher firm-level governance benefits are portable from the bidder to the target. The target shareholders can enjoy the benefits of the good governance of the bidder. Our results are in accordance with recent studies that document positive bidder returns resulting from the portability of country governance (see, for example, Ellis et al., 2017; Martynova and Renneboog, 2008).

The regression models include a set of control variables that have been suggested in the existing literature. The coefficients of control variables are similar in magnitude and statistical significance across the four model specifications (Model 5 to 8) in Table 2.4. Most of the coefficients of controls are qualitatively similar to what other studies report (Masulis, Wang, and Xie, 2007; Moeller, Schlingemann, and Stulz, 2005; Wang and Xie, 2009). More importantly, we find that cross-border dummy, bidder size, and GDP per capita has a negative effect on bidder CARs.

Overall, we find that firm corporate governance is portable from bidders to targets in M&As, and the bidder shareholders earn higher returns as the bidder-target governance gap increases. These results still hold after including year, industry, and country fixed effects, using alternative firm governance measures, and testing different sample periods. The results contribute to the portability theory of Ellis et al. (2017), showing that country-level governance and firm-level governance can be exported from bidders to targets through M&As.

2.5.2. Cross-border versus Domestic deals

Next, we do an additional analysis to provide evidence on two different subsamples – cross-border versus domestic deals. We investigate if the uncovered portability effect is higher in cross-border deals than domestic deals. The expansion through cross-border mergers and acquisitions allows firms to get additional rents due to market inefficiencies and different tax systems (Servaes and Zenner, 1994). For instance, Col (2017) examines tax-motivated M&As and finds that tax benefits, associated with tax haven jurisdictions, may motivate some cross-border acquisitions, although at the cost of exposing firms to weaker corporate governance environments. Another source of increasing takeover value in cross-border M&As can be persuaded by enhancements in poorly managed firm's corporate governance by well-managed firms due to portability of corporate

governance standards (Martynova and Renneboog, 2008; Ellis et al., 2017). Relatively few studies explore the effect of firm-level governance difference on takeover returns, the notable exception being Wang and Xie (2009). They use the corporate governance index made by Gompers, Ishii, and Metrick (2003) to measure shareholder rights and show that target firms benefit from bidder's higher firm-level shareholder rights in domestic U.S. mergers and acquisitions. This chapter presents evidence of the variation in corporate governance standards between bidders and targets within the same country (the U.S.). However, the scope for potential improvements in governance standards is even higher in cross-border deals (Martynova and Renneboog, 2008) because significant differences in governance standards amplify the gap between the acquirer and target governance.

Our global sample enables us to identify the effect of a gap in firm-level governance separately for cross-border and domestic deals; therefore, we separate cross-border deals from domestic deals in Table 2.5 and test our models. We use the cross-border sample of M&As in Models (1) to (4) of Table 2.5. In these regressions, we control for the same variables as in Table 2.4. The coefficient of interest here is the bidder-target firm governance gap. We find that the governance gap has a significantly positive effect on bidder returns[16] and suggests that cross-border deals are value-enhancing for bidder firms. Our results for the bidder returns support the hypothesis that portability has valuation effects for cross-border deals. Nevertheless, there are some competing explanations for these results. First, it is well documented that several frictions and costs are related to the acquisition process and post-acquisition integration (Erel, Liao, and Weisbach, 2012; Fama and Jensen, 1983; La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998; Rajagopalan and Finkelstein, 1992). Considering the higher costs related to cross-border deals, the benefits of applying higher governance standards of the target can outweigh their costs for the targets. Given the portability effect of cross-border deals, the target firms can benefit from the bidder's higher governance standards. Second, the cross-border deals are accessible to firms from several nations, and therefore the price of such deals is set internationally (Ellis et al., 2017). Thus, cross-border deals generate higher gains than domestic deals (Martynova and Renneboog, 2008). Third and perhaps most importantly, there is more heterogeneity in firm governance mechanisms when firms engage in cross-border deals than domestic deals.

We next run similar regressions for domestic deals in Models (5) to (8) of Table 2.5. In these models, we use bidder's country governance instead of the country-level governance difference

[16] For example, in Model (1), one standard deviation increase in the board structure gap increases bidder CARs by 1.01 percentage points (0.0004× 25.255× 100).

between bidder and target. Our results show that the governance gap has a positive and statistically significant effect on bidder CARs. However, the economic magnitudes are lower and statistically less precise than in cross-border deals. The reason behind comparatively weaker portability effects on the bidder CARs in domestic deals can be lower variation in firm governance standards or lower potential improvements in governance than cross-border deals. Our results show that the portability effect in cross-border deals is higher than in domestic deals mainly because of significant variation in firm corporate governance across the countries than within countries.

2.6 Robustness tests

This section examines the robustness of the positive impact of corporate governance portability on bidder CARs documented above. The results are also robust when we use the following alternative specifications of our models: (1) we measure bidder cumulative abnormal returns over 11-day event window and results are in Panel A of Table 2.6; (2) in Panel B of Table 2.6, we construct an overall index (Model 1) based on four governance indices used in the chapter; PCA index (Model 2) using the principal component analysis to construct average governance score of the bidder and the target, we retain the first component having the Eigenvalue of greater than one and calculate the governance difference by subtracting PCA index score of the target from the PCA index score of the bidder; also develop governance indices based on widely discussed attributes in the literature; the results remain qualitatively unchanged; (3) mergers and acquisitions happen in waves and clusters in industries and mainly they cluster in time (Martinez-Blasco and Garcia-blandon, 2017), In Panel C of Table 2.6, we examine the portability effect over two periods of time and test whether our findings are driven by acquisitions clustering within a specific time period, we re-estimate models in Table 2.4 on subsamples of takeovers from 2003 to 2009 (494 transactions) and from 2010 to 2016 (532 transactions) respectively, the gap in firm corporate governance has a positive effect on bidder returns in each subsample regression. Thus, all results are consistent with prior evidence that well-managed bidder's acquisitions of poorly-managed targets generate higher bidder returns.

2.7 Portability of firm governance and country governance

We now examine whether the portability effect is different in M&As depending on the bidder country governance. Referring to the legal, political, regulatory, and economic frameworks of a country that enforce laws and property rights, institutions are deemed to be an important determinant of the way of doing business (Salomon and Wu, 2012). Kim and Ozdemir (2014) show that external governance mechanisms (investor protection, the rule of law, and open markets institution) change

the costs and benefits of board structure choices, suggesting that firms alter their boards according to the institutional environment. Zattoni et al. (2020) examine the effect of institutional quality on firm-level corporate governance (ownership structure, the board of directors, executive compensation, CEO) and firm outcomes (capital structure, earnings management, operating performance); they find that better institutional quality protects investors and is positively linked with better governance standards and firm outcomes. Many studies investigate the interaction between country-level and firm-level governance (Aggarwal, Erel, Williamson, and Stulz, 2009; Klapper and Love, 2004) and find a positive correlation. Therefore, we would expect that the portability effect is more likely to create higher bidder CARs when the bidder is domiciled in a better-governed country. This is because investors value more good governance standards in these countries (Ellis et al., 2017; Klapper and Love, 2004). The better quality of country institutions helps make the portability of better governance more effective (Martynova and Renneboog, 2008). Based on these arguments, the portability effect should be higher when the bidder is from a better-governed country. To test this, we use the following model:

$$Bidder\ CAR(-2,+2)_{d,t} = \alpha + \beta_1 CG\ GAP_{d,k,t-1} + \beta_2 high\ Country\ gov_{j,t-1} + \beta_3 CG\ GAP_{d,k,t-1} \times high\ Country\ gov._{j,t-1} + \sum \beta_m\ Deal\ \ controls_{dt} + \sum \beta_n Firm\ controls_{i,t-1} + \sum \beta_q\ Country\ controls_{j,t-1} + \sum \beta_f\ FE_{t,k,j} + \varepsilon_{i,t} \quad (3)$$

To measure country governance, we use World Governance Indicators issued by the World Bank (see Kaufmann, Kraay, and Mastruzzi, 2009) and the anti-self-dealing index (ASDI) proposed by Djankov et al. (2008). The indicators are time-varying and measure how well a nation overcomes corruption, government effectiveness, regulatory quality, the recognition for the rule of law, the level of political stability, and citizen's freedom to elect a government. Following Kaufmann, Kraay, and Mastruzzi (2009), we compute the mean index (WGI index) based on these six attributes for each country and create a dummy variable based on the WGI index and ASDI. We define better-governed countries if the index is above the world median.

Table 2.7 estimates cross-sectional regressions of bidder CARs on the same variables included in Table 2.4 except bidder's WGI index plus an additional variable based on the interaction between firm governance gap and WGI index. Like before, all regressions include year, industry, and country fixed effects. Our variable of interest is the interaction between the bidder-target governance gap and the bidder's WGI index (a proxy for the better-governed countries). Models (1)-(4) test the

interaction between the firm governance gap and the WGI index; we find that, on average, the portability effect is positive when the bidder is from a better-governed country. The coefficient on the interaction term [$High\ bidder\ WGI \times B - T\ governance\ gap$] is positive and statistically significant in all of the regressions. As far as economic magnitude is concerned, for instance, in Model (1), we observe that on average portability effect is 0.06 percentage points higher when the bidder is from a better-governed country. In Models (5)-(8), the variable of interest is the interaction between the bidder-target governance gap and high bidder ASDI. The results support the view that the portability effect is higher when bidders are from better-governed countries.

Overall, we find evidence that the portability effect is higher when the bidder is domiciled in a country with better governance standards. It is in line with the notion that bidders from better-governed countries make value increasing-acquisitions (Ellis et al., 2017; Martynova and Renneboog, 2008) and suggests that firms may adopt good governance standards, but the country should have adequate enforcement for those standards to be efficient.

2.8 Conclusion

As predicted by our hypothesis, we demonstrate that the benefits of good firm corporate governance are portable. The bidder returns increase as the firm corporate governance gap between the bidder and the target increases. We focus on four essential aspects of a firm's corporate governance: board structure, board function, compensation policies, and shareholder rights, as a proxy for how well a company is managed. Our results suggest a positive valuation effect from the portability of firm-level governance from the acquirer to the target. The bidder shareholders capture this valuation effect as the effect of the bidder-target corporate governance gap is positive and statistically significant on bidder's announcement returns.

When we dichotomize our sample into domestic and cross-border deals, we find that the portability effect on bidder returns is stronger in cross-border deals. This result suggests that there is more heterogeneity in firm-level governance between the bidder and the target in cross-border deals than domestic deals and weakly governed targets can benefits strongly governed bidders after a successful acquisition. We also show that the portability of corporate governance interacts positively with country governance in our global sample. It means that the portability effect is stronger in countries with better country-level corporate governance, suggesting that firms can have good governance mechanisms. Still, the country has to have fair enforcement for those mechanisms to be efficient.

Our findings are not due to firm corporate governance, acting as a proxy for country-level governance. In all our regression analyses, we control the country-level governance gap, and our results on the portability of firm corporate governance still hold. Overall, our results suggest that M&A deals with different firm corporate governance standards create higher bidder returns, partly associated with firm corporate governance improvements of targets. Eventually, We can extend the portability theory of Ellis et al. (2017) and show that apart from the country-level governance, firm-specific corporate governance can also be transferred from bidders to targets through M&As.

Table 2.1: Distribution by the bidder's country

The table shows the sample distribution of control acquisitions per country between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. We eliminate countries with less than five deals during the sample period.

Country	No. of bidder firms	No. of domestic deals	No. of cross-border deals
Australia	66	75	19
Canada	101	145	42
Finland	4	1	7
France	34	25	43
Germany	17	5	15
India	7	4	4
Israel	5	2	9
Italy	9	1	11
Japan	135	157	45
Norway	5	3	4
Spain	10	5	7
Sweden	12	3	14
Switzerland	17	7	27
United Kingdom	36	19	29
United States	133	197	101
Total	591	649	377

Table 2.2: Descriptive statistics

The sample consists of 1026 completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. The CARs are calculated using the market model for the period (-255, -25). The bidder's CARs are the 5-day cumulative abnormal returns around the announcement date. Other variables are defined in Appendix A and Appendix B.

	N	Mean	Median	S.D.	Min	Max
Panel A: Cumulative abnormal returns						
Bidder CARs	1026	.023	.019	.051	-.198	.267
Panel B: Bidder-target firm governance gap						
Board Structure gap	1026	39.229	47.515	25.255	-67.844	71.855
Board Function gap	1026	40.555	53.311	28.128	-66.201	76.066
Compensation Policy gap	1026	39.672	51.058	25.748	-60.795	71.531
Shareholder Rights gap	1026	43.278	51.468	24.952	-60.436	71.611
Panel C: Country characteristics						
WGI gap	1026	7.243	0	24.329	-42.474	99.756
GDP growth	1026	1.938	2.225	2.04	-5.697	7.996
Log GDP per capita	1026	10.669	10.695	.367	7.005	11.519
Panel D: Deal characteristics						
Payment method (dummy)	1026	.555	1	.497	0	1
Cross-border deal (dummy)	1026	.367	0	.482	0	1
Same industry deal (dummy)	1026	.378	0	.485	0	1
Relative size	1026	.183	.051	.336	0	2.706
Panel E: Bidder characteristics						
Bidder Leverage	1026	.225	.208	.162	0	.917
Bidder Tobin Q	1026	.531	.542	.213	-.084	1.351
Bidder Size	1026	15.913	15.867	1.696	10.347	19.583
Bidder Run up	1026	.005	.001	.182	-.867	.931

Table 2.3: Correlation Matrix

The sample consists of 1026 completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. The CARs are calculated using the market model for the period (-255, -25). Bidder CARs are 5-day cumulative abnormal returns around the announcement date. All variables are defined in Appendix A and Appendix B.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	1															
2	0.13***	1														
3	0.10***	0.93***	1													
4	0.11***	0.92***	0.94***	1												
5	0.13***	0.87***	0.84***	0.84***	1											
6	-0.00	-0.00	-0.01	-0.00	-0.00	1										
7	-0.03	0.09**	0.05	0.04	0.12***	0.00	1									
8	-0.09**	-0.03	-0.01	0.00	-0.07*	0.39***	0.13***	1								
9	-0.05	0.06*	0.10**	0.10***	0.00	0.00	-0.21***	0.02	1							
10	0.01	-0.30***	-0.26***	-0.26***	-0.35***	-0.07*	-0.31***	-0.00	0.07*	1						
11	0.00	-0.09**	-0.09**	-0.07*	-0.09**	0.00	-0.07*	-0.00	-0.06*	0.07*	1					
12	-0.01	-0.11***	-0.12***	-0.09**	-0.08**	0.05	0.05	0.04	-0.23***	-0.02	0.68***	1				
13	-0.08**	-0.05	-0.05	-0.05	-0.00	0.09**	0.32***	0.07*	-0.24***	-0.27***	0.20***	0.41**	1			
14	-0.03	0.01	0.01	0.02	0.00	0.05	-0.05	0.00	-0.00	-0.03	0.05	-0.00	-0.03	1		
15	0.06*	0.11***	0.15***	0.11***	0.04	-0.02	-0.06*	-0.05	0.06*	0.09**	-0.01	-0.08**	-0.08**	-0.00	1	
16	-0.08**	0.10**	0.08**	0.09**	-0.02	-0.02	0.00	-0.03	-0.00	0.04	-0.05	-0.06	0.01	0.06*	-0.11***	1

(1) Bidder CARs
(2) Board structure gap
(3) Board function gap
(4) Compensation policy gap
(5) shareholder rights gap
(6) Country governance gap
(7) Payment method dummy
(8) Cross-border dummy
(9) Same industry dummy
(10) Relative size
(11) Bidder leverage
(12) Bidder Tobin Q
(13) Bidder size
(14) Bidder run up
(15) GDP growth
(16) GDP per capita

Table 2.4: Bidder cumulative abnormal returns

The sample consists of 1026 completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. Our dependent variable is the bidder's 5-day cumulative abnormal returns around the announcement date. The main variable of interest ("Bidder-target governance gap") is the firm-level corporate governance difference between the bidder and the target governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are based on 55 firm governance attributes from the ASSET4 ESG database having a percentage score from 0 (lowest) to 100 (highest). Other variables are defined in Appendix A and Appendix B. T-statistics are shown in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980). *, ** and *** show statistical significance level at 10%, 5% and 1% respectively. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variables	Board	Board	Compensation	Shareholder	Board	Board	Compensation	Shareholder
Bidder CARs (-2, +2)	Structure	Function	Policy	Rights	Structure	Function	Policy	Rights
Bidder-target governance gap	0.0003***	0.0003***	0.0003***	0.0003***	0.0004***	0.0003***	0.0004***	0.0003***
	(4.025)	(3.728)	(3.910)	(3.400)	(3.886)	(3.643)	(3.881)	(3.294)
Country governance gap					0.0000	0.0001	0.0001	0.0001
					(0.781)	(0.873)	(0.869)	(0.836)
Payment method dummy					-0.0042	-0.0040	-0.0038	-0.0037
					(-1.099)	(-1.062)	(-1.006)	(-0.977)
Cross-border dummy					-0.0116***	-0.0116***	-0.0117***	-0.0113***
					(-2.760)	(-2.750)	(-2.775)	(-2.666)
Same industry dummy					-0.0052	-0.0057	-0.0058	-0.0050
					(-1.275)	(-1.384)	(-1.416)	(-1.218)
Relative size					0.0076	0.0067	0.0070	0.0062
					(0.822)	(0.725)	(0.757)	(0.674)
Bidder leverage					0.0014	0.0013	0.0013	0.0017
					(0.088)	(0.084)	(0.087)	(0.112)
Bidder Tobin Q					0.0055	0.0055	0.0043	0.0056
					(0.433)	(0.436)	(0.342)	(0.443)
Bidder size					-0.0023	-0.0027*	-0.0025*	-0.0025*
					(-1.572)	(-1.817)	(-1.698)	(-1.705)
Bidder run up					-0.0095	-0.0098	-0.0102	-0.0096
					(-0.795)	(-0.816)	(-0.853)	(-0.803)
GDP growth					0.0023	0.0022	0.0023	0.0025
					(1.317)	(1.258)	(1.345)	(1.449)
GDP per capita					-0.0316	-0.0340*	-0.0353*	-0.0371*
					(-1.646)	(-1.775)	(-1.843)	(-1.951)
Constant	0.0828***	0.0825***	0.0827***	0.0800***	0.4482**	0.4775**	0.4890**	0.5050**
	(5.931)	(5.904)	(5.996)	(5.620)	(2.227)	(2.386)	(2.445)	(2.535)
Year, industry, and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1026	1026	1026	1026	1026	1026	1026	1026
R^2	0.1166	0.1133	0.1144	0.1107	0.1404	0.1376	0.1388	0.1340

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 2.5: Cross-border versus domestic deals

The sample consists of completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. Our dependent variable is the bidder's 5-day cumulative abnormal returns around the announcement date. The key independent variable ("Bidder-target governance gap") is the firm-level corporate governance difference between the bidder and the target governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are based on 55 firm governance attributes from the ASSET4 ESG database having a percentage score from 0 (lowest) to 100 (highest). Other variables are defined in Appendix A and Appendix B. T-statistics are shown in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980). *, ** and *** show statistical significance level at 10%, 5% and 1% respectively.

	Cross-border deals				Domestic deals			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variables	Board	Board	Compensation	Shareholder	Board	Board	Compensation	Shareholder
Bidder CARs (-2, +2)	Structure	Function	Policy	Rights	Structure	Function	Policy	Rights
Bidder-target governance gap	0.0004***	0.0004***	0.0004***	0.0004***	0.0003**	0.0003**	0.0003**	0.0003**
	(2.941)	(2.665)	(2.919)	(2.873)	(2.357)	(2.445)	(2.412)	(1.988)
Country governance gap	0.0000	0.0000	0.0000	0.0000				
	(0.543)	(0.557)	(0.566)	(0.537)				
Bidder country governance					0.0019	0.0020	0.0019	0.0022
					(1.139)	(1.242)	(1.188)	(1.311)
Payment method dummy	0.0014	0.0020	0.0020	0.0023	-0.0091*	-0.0095*	-0.0089	-0.0089
	(0.231)	(0.321)	(0.323)	(0.380)	(-1.658)	(-1.736)	(-1.638)	(-1.633)
Same industry dummy	-0.0007	-0.0009	-0.0013	-0.0002	-0.0079	-0.0082	-0.0084	-0.0078
	(-0.109)	(-0.139)	(-0.194)	(-0.036)	(-1.435)	(-1.494)	(-1.524)	(-1.419)
Relative size	0.0030	0.0007	0.0024	0.0009	0.0095	0.0101	0.0093	0.0087
	(0.211)	(0.048)	(0.172)	(0.065)	(0.813)	(0.851)	(0.794)	(0.737)
Bidder leverage	0.0392	0.0404	0.0415	0.0405	-0.0152	-0.0161	-0.0162	-0.0153
	(1.421)	(1.442)	(1.496)	(1.464)	(-0.804)	(-0.856)	(-0.860)	(-0.818)
Bidder Tobin Q	-0.0195	-0.0208	-0.0227	-0.0183	0.0130	0.0136	0.0127	0.0131
	(-0.824)	(-0.872)	(-0.953)	(-0.780)	(0.841)	(0.883)	(0.826)	(0.849)
Bidder size	0.0012	0.0007	0.0010	0.0007	-0.0030*	-0.0031*	-0.0031*	-0.0030*
	(0.461)	(0.276)	(0.364)	(0.260)	(-1.659)	(-1.746)	(-1.721)	(-1.656)
Bidder run up	-0.0223	-0.0201	-0.0215	-0.0212	-0.0058	-0.0062	-0.0067	-0.0060
	(-0.977)	(-0.867)	(-0.934)	(-0.910)	(-0.410)	(-0.435)	(-0.468)	(-0.424)
GDP growth	0.0005	0.0003	0.0003	0.0008	0.0040*	0.0039*	0.0041*	0.0042*
	(0.184)	(0.117)	(0.133)	(0.308)	(1.764)	(1.730)	(1.815)	(1.854)
GDP per capita	-0.0484	-0.0540	-0.0554*	-0.0540	-0.0346	-0.0329	-0.0358	-0.0391
	(-1.502)	(-1.649)	(-1.686)	(-1.649)	(-1.351)	(-1.281)	(-1.396)	(-1.537)
Constant	0.5465	0.6167*	0.6256*	0.6061*	0.2787	0.2433	0.2820	0.2936
	(1.643)	(1.828)	(1.852)	(1.799)	(0.850)	(0.734)	(0.857)	(0.885)
Year, industry, and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	377	377	377	377	649	649	649	649
R^2	0.2623	0.2554	0.2609	0.2561	0.1840	0.1859	0.1840	0.1808

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 2.6: Robustness tests

The sample consists of 1026 completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. The key independent variable ("Bidder-target governance gap") is the firm-level corporate governance difference between the bidder and the target governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are based on 55 firm governance attributes from the ASSET4 ESG database having a percentage score from 0 (lowest) to 100 (highest). The results for 11-day CARs are presented in Panel A. Panel B shows results for different firm corporate governance measurements. In Panel C, we show results for two different periods of the sample. Other variables are defined in Appendix A and Appendix B. T-statistics are shown in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980). *, ** and *** show statistical significance level at 10%, 5% and 1% respectively. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

Panel A: 11-day Bidder cumulative abnormal returns

	(1)	(2)	(3)	(4)
Dependent variables	Board	Board	Compensation	Shareholder
Bidder CARs (-5, +5)	Structure	Function	Policy	Rights
Bidder-target governance gap	0.0005***	0.0004***	0.0004***	0.0004***
	(4.267)	(4.191)	(4.256)	(3.945)
Control variables and constant	Yes	Yes	Yes	Yes
Year, industry, and country dummies	Yes	Yes	Yes	Yes
N	1026	1026	1026	1026
R^2	0.1518	0.1508	0.1510	0.1487

Panel B: Alternative measures of firm governance

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variables	Average	PCA	Board	Board	Compensation	Shareholder
Bidder CARs (-2, +2)	index	index	Structure	function	Policy	Rights
Bidder-target governance gap	0.0004***	0.0068***	0.0003***	0.0003***	0.0003***	0.0003***
	(3.752)	(3.857)	(3.620)	(3.557)	(3.937)	(3.211)
Control variables and constant	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry, and country dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1026	1026	1026	1026	1026	1026
R^2	0.1391	0.1385	0.1365	0.1353	0.1389	0.1316

Panel C: Sub-periods of sample

	2003-2009				2010-2016			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variables	Board	Board	Comp.	Share.	Board	Board	Comp.	Share.
Bidder CARs (-2, +2)	Structure	Function	Policy	Rights	Structure	Function	Policy	Rights
Bidder-target gov. gap	0.0004***	0.0003**	0.0004**	0.0004**	0.0004***	0.0004***	0.0003***	0.0003***
	(2.695)	(2.278)	(2.490)	(2.579)	(2.909)	(3.078)	(3.107)	(2.630)
Control variables and constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry, and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	494	494	494	494	532	532	532	532
R^2	0.2106	0.2041	0.2063	0.2047	0.1901	0.1926	0.1902	0.1870

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 2.7: Portability and bidder's country governance

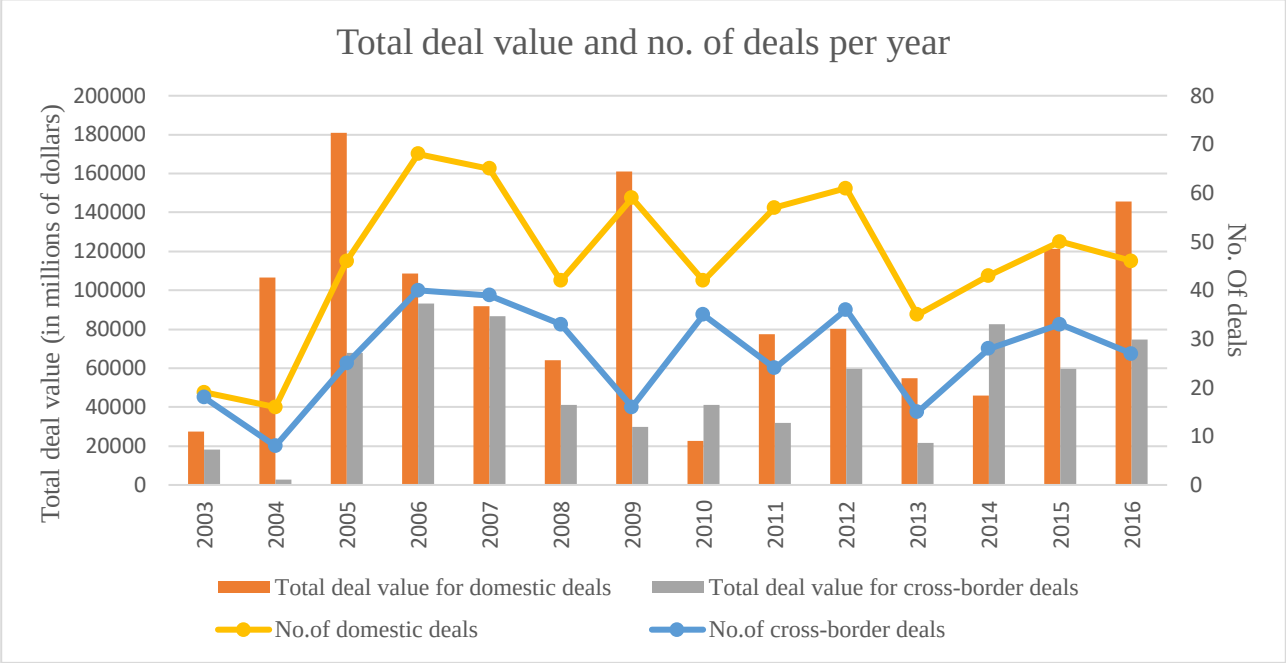
The sample consists of 1026 completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. Our dependent variable is the bidder's 5-day cumulative abnormal returns around the announcement date. The variable of interest is the interaction between the better-governed country (measured with WGI and ASDI) and the bidder-target governance gap (B-T gap). We create a dummy variable that equals one if the country governance is above the world median (High WGI/High ASDI) and zero otherwise. The B-T gap is the firm-level corporate governance difference between the bidder and the target governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are based on 55 firm governance attributes from the ASSET4 ESG database having a percentage score from 0 (lowest) to 100 (highest). Other variables are defined in Appendix A and Appendix B. T-statistics are shown in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980). *, ** and *** show statistical significance level at 10%, 5% and 1% respectively. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variables	Board	Board	Compensation	Shareholder	Board	Board	Compensation	Shareholder
Bidder CARs (-2, +2)	Structure	Function	Policy	Rights	Structure	Function	Policy	Rights
B-T gap	-0.0002	-0.0002	-0.0002	-0.0004	0.0001	0.0001	0.0001	0.0000
	(-0.507)	(-0.651)	(-0.649)	(-0.958)	(0.635)	(0.413)	(0.409)	(0.280)
Higher Bidder WGI	-0.0335	-0.0343	-0.0419	-0.0433				
	(-1.342)	(-1.295)	(-1.579)	(-1.494)				
Higher Bidder WGI x B-T gap	0.0006*	0.0006*	0.0006*	0.0007*				
	(1.701)	(1.717)	(1.876)	(1.840)				
High ASDI					-0.0415***	-0.0439***	-0.0457***	-0.0434***
					(-2.811)	(-2.986)	(-3.067)	(-3.015)
High ASDI x B-T gap					0.0004**	0.0004**	0.0004**	0.0004**
					(2.374)	(2.385)	(2.516)	(2.496)
Control variables and constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry, and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1026	1026	1026	1026	1026	1026	1026	1026
R^2	0.1432	0.1405	0.1422	0.1392	0.1032	0.0998	0.1023	0.0965

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

Figure 2.1: Deal value and number of deals

This figure reveals the total deal value (in millions of dollars) and the number of deals of all acquisitions led by bidders over 2003 to 2016. The data are obtained from the Securities data corporation (SDC).



Appendix A: Variable definitions of Chapter 2

Variable	Definition
Panel A: Cumulative Abnormal Returns	
Bidder CARs	5-day bidder cumulative abnormal returns around the announcement date. The CARs are calculated using the market model for the period (-255, -25). Source: DataStream.
Panel B: Firm-level governance indices	
Board Structure index	Taken from ASSET4ESG, based on lagged average of 16 variables (definitions in appendix B).
Board function index	Taken from ASSET4ESG, based on lagged average of 15 variables (definitions in appendix B).
Compensation policy index	Taken from ASSET4ESG, based on lagged average of 13 variables (definitions in appendix B).
Shareholder rights index	Taken from ASSET4ESG, based on lagged average of 11 variables (definitions in appendix B).
Panel C: Bidder's country characteristics	
WGI index	It is the average index based on six country governance dimensions proposed by Kaufmann, Kraay, and Mastruzzi (2009). These dimensions include control of corruption, political stability, govt. Effectiveness, the rule of law, voice and accountability, and regulatory quality. Source: World Governance Indicators.
GDP growth	Annual growth in real GDP. Source: World Development Indicators.
Log GDP per capita	Log of real GDP (current US dollars)/average population. Source: World Development Indicators.
Panel D: deal characteristics	
Payment method	Dummy variable: 1 for the purely cash-financed deal, 0 otherwise. Source: Securities Data Corporation.
Cross border deal	Dummy variable: 1 if cross border deal, 0 otherwise. Source: Securities Data Corporation.
Same industry deal	Dummy variable: 1 for same industry deal, 0 otherwise. Source: Securities Data Corporation.
Relative size	Deal value/Bidder market value of equity. Sources: Securities Data Corporation and World Scope.
Panel E: Bidder characteristics	
Bidder run-up	The sum of abnormal returns using the market model for a window of 90 days up to 20 days before deal announcement. Source: DataStream.
Leverage	Long-term debt/total assets. Source: WorldScope.
Tobin's Q	(assets – book value of equity + market value of equity) /assets. Source: WorldScope.
Size	Natural logarithm of book value of assets. Source: WorldScope.

Appendix B: Definitions of the firm-level governance variables from the ASSET4ESG

A. Board Structure index

(1) Background and skills	"Does the company describe the professional experience or skills of every board member? OR Does the company provide information about the age of individual board members?".
(2) Board Diversity	"Percentage of female on the board."
(3) Board Member Affiliations	"Average number of other corporate affiliations for the board member."
(4) CEO-Chairman Separation	"Does the CEO simultaneously chair the board? AND has the chairman of the board been the CEO of the company?".
(5) Experienced Board	"Average number of years each board member has been on the board."
(6) Implementation	"Does the company describe the implementation of its balanced board structure policy?".
(7) Improvements	"Does the company have the necessary internal improvement and information tools to develop balanced board structure?".
(8) independent board members	"Percentage of independent board members as reported by the company."
(9) Individual Reelection	"Are all board members individually subject to re-election (no classified or staggered board structure)?".
(10) Mandates Limitation	"Does the company provide information about the other mandates of individual board members? AND Does the company stipulate a limit of the number of years of board membership?".
(11) Monitoring	"Does the company monitor the board functions through the establishment of a nomination committee?".
(12) non-executive board members	"Percentage of non-executive board members."
(13) Policy	"Does the company have a policy for maintaining a well-balanced membership of the board?".
(14) Size of Board	"Total number of board members which are in excess of ten or below eight."
(15) Specific Skills	"Percentage of board members who have either an industry specific background or a strong financial background."
(16) Strictly Independent Board Members	"Percentage of strictly independent board members (not employed by the company; not representing or employed by a majority)."

B. Board Function index

(1) Audit Committee Expertise	"Does the company have an audit committee with at least three members and at least one "financial expert" within the meaning of Sarbanes-Oxley?".
(2) Audit Committee Independence	"Percentage of independent board members on the audit committee as stipulated by the company."
(3) Audit Committee Management Independence	"Does the company report that all audit committee members are non-executives?".
(4) Board Attendance	"Does the company publish information about the attendance of the individual board members at board meetings?".
(5) Board Meetings	"Number of board meetings per year."
(6) Compensation Committee Independence	"Percentage of independent board members on the compensation committee as stipulated by the company."
(7) Compensation Committee Management Independence	"Does the company report that all compensation committee members are non-executives?".
(8) Implementation	"Does the company describe the implementation of its board functions policy?".
(9) improvements	"Does the company have the necessary internal improvement and information tools to develop appropriate and effective board functions?".
(10) Monitoring	"Does the company monitor the board functions through the establishment of a corporate governance committee?".

(11) Nomination committee independence	"Percentage of non-executive board members on the nomination committee."
(12) Nomination committee involvement	"Percentage of nomination committee members who are significant shareholders (more than 5%)."
(13) Nomination Committee Management Independence	"Are the majority of the nomination committee members non-executives?".
(14) Nomination Committee Processes	"Does the nomination committee have the responsibility for the selection, appointment and succession procedures for board members or executives?" OR Does the company report or show to constantly supervise the performance of board members or executives?".
(15) Policy	"Does the company have a policy for maintaining effective board functions?".
C. Compensation Policy index	
(1) Board Member Compensation	"Total compensation of the non-executive board members in US dollars."
(2) Compensation Controversies	"Is the company under the spotlight of the media because of a controversy linked to high executive or board compensation?".
(3) Highest remuneration package	"Highest remuneration package within the company in US dollars."
(4) Implementation	"Does the company describe the implementation of its compensation policy?".
(5) Improvements	"Does the company have the necessary internal improvement and information tools to develop attractive and performance-oriented compensation policy?".
(6) Individual compensation	"Does the company provide information about the total individual compensation of all executives and board members?".
(7) Long Term Objectives	"Is the management and board members remuneration partly linked to objectives or targets which are more than two years forward looking?".
(8) Monitoring	"Does the company monitor the senior executives and board compensation through the establishment of a compensation committee?".
(9) Policy	"Does the company have a policy for performance-oriented compensation that attracts and retain the senior executives and board members?".
(10) Remuneration structure	"Does the company subdivide the remuneration of executives according to fixed salaries, bonuses and stock option plans (or restricted stocks)?".
(11) Stock compensation	"Do the companies most recently granted stocks or stock options vest in a three-year period at a minimum?".
(12) Stock option program	"Does the company's a statute or by-laws require that stock-options are only granted with a vote at a shareholder meeting?".
(13) Sustainability Compensation Incentives	"Is the senior executive's compensation linked to CSR/H&S/Sustainability targets?".
D. Shareholder Rights index	
(1) Anti-takeover devices	"The number of anti-takeover devices in place in excess of two."
(2) Available articles of association	"Are the company's articles of association, statues or bylaws publicly available or on request?".
(3) Implementation	"Does the company describe the implementation of its shareholder rights policy?".
(4) Improvements	"Does the company have the necessary internal improvement and information tools to develop appropriate shareholder rights principles?"
(5) Majority shareholders	"Percentage of shares held by all insiders and 5% owners."
(6) Monitoring	"Does the company monitor the shareholder rights through the establishment of a corporate governance committee?".
(7) Ownership	"Is the company owned by a reference shareholder who has the majority of the voting rights, veto power or golden share?".

(8) Policy	"Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement or limiting the use of anti-takeover devices?".
(9) Share structure	"Is the company's outstanding equity constituted of 100% common stocks?".
(10) Shareholder controversies	"Is the company under the spotlight of the media because of a controversy linked to shareholders rights?".
(11) Voting rights	"Are all shares of company providing equal rights?".

Internet Appendix of Chapter 2: Updated data by ASSET4 ESG

The sample consists of completed international mergers and acquisitions listed in Securities Data Corporation (SDC) between 2003 and 2016. The ASSET4ESG database covers both the acquirer and target before an M&A deal. The key independent variable ("Bidder-target governance gap") is the firm-level corporate governance difference between the bidder and the target governance scores of the updated categories of governance, management, and shareholder rights. The management and shareholder rights scores are weighted averages of individual governance attributes (67 in the management category and 50 in shareholders) under each category, and governance score is the weighted average based on management, shareholder, and CSR categories. These categories have a percentage score from 0 (lowest) to 100 (highest). The results for 5-day CARs are presented in the table. Other variables are defined in Appendix A and Appendix B. T-statistics are shown in parenthesis; Standard errors are corrected for heteroscedasticity (White,1980). *, ** and *** show statistical significance level at 10%, 5% and 1% respectively. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

	(1)	(2)	(3)
Dependent variables:	Governance	Management	Shareholder
Bidder CARs (-2, +2)			Rights
Bidder-target governance gap	0.0002**	0.0002**	0.0001
	(2.283)	(2.525)	(1.414)
Country governance gap	0.0000	0.0000	0.0000
	(0.701)	(0.698)	(0.765)
Payment method dummy	-0.0031	-0.0030	-0.0026
	(-0.787)	(-0.783)	(-0.670)
Cross-border dummy	-0.0118***	-0.0117***	-0.0114**
	(-2.691)	(-2.681)	(-2.580)
Same industry dummy	-0.0049	-0.0048	-0.0050
	(-1.171)	(-1.159)	(-1.186)
Relative size	0.0022	0.0016	0.0006
	(0.247)	(0.183)	(0.072)
Bidder leverage	0.0012	0.0029	0.0001
	(0.074)	(0.178)	(0.005)
Bidder Tobin Q	0.0108	0.0098	0.0117
	(0.818)	(0.744)	(0.885)
Bidder size	-0.0039**	-0.0037**	-0.0034**
	(-2.523)	(-2.408)	(-2.198)
Bidder run up	-0.0112	-0.0116	-0.0111
	(-0.873)	(-0.906)	(-0.860)
GDP growth	0.0026	0.0025	0.0029*
	(1.496)	(1.456)	(1.657)
GDP per capita	-0.0371*	-0.0372*	-0.0393**
	(-1.914)	(-1.928)	(-2.013)
Constant	0.5373***	0.5377***	0.5513***
	(2.665)	(2.677)	(2.718)
Year, industry, and country dummies	Yes	Yes	Yes
N	998	1000	1000
R^2	0.1268	0.1278	0.1215

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

3 Firm corporate governance changes following mergers and acquisitions

3.1 Introduction

Target firms with weaker corporate governance can enhance their governance quality through mergers and acquisitions. The empirical evidence reveals that the target's country-level governance quality is lower than the bidder's before the acquisition (see Bris, Brisley, and Cabolis, 2008; Rossi and Volpin, 2004). The cross-country dissimilarities in governance standards offer an opportunity for the portability of better governance through M&As (Ellis, Moeller, Schlingemann, and Stulz, 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009). Therefore, the post-integration process led by acquirers with better corporate governance can result in higher governance quality of the combined firm by better protecting shareholder rights and more rigorous accounting disclosure requirements. Wang and Xie (2009) argue that the combined firm will adopt the bidder's more substantial shareholder rights after the acquisition. While the transfer of higher corporate governance standards from bidders to targets happens through the portability channel, the empirical evidence on the change in combined firm's governance quality is still scarce. To fill this gap, we examine ex-post change in the governance of the combined firm relative to the ex-ante weighted average governance of the bidder and target and show the portability-induced changes in the quality of the combined firm governance.

We expect a positive spillover of the bidder's governance post-acquisition in deals where the bidder's corporate governance quality exceeds that of the target's before an acquisition. In majority or full takeovers, bidders with better corporate governance tend to impose their best practices on the combined firm and overcome the target's weaker corporate governance. After a deal is completed, a well-conducted integration process is essential for the sucecss of an acquisition (Heimeriks, Schijven, and Gates, 2012). This phase encompasses changes in the target's governance standards that can alter the managerial structure and provide better protection to shareholders of the merged firm. Eventually, an M&A transaction with a positive pre-deal bidder-target governance gap (i.e., the bidder has better governance than the target) results in governance convergence[17] towards the higher standards in terms of balanced board structure, the effectiveness of board activities, better compensation policies, and minority shareholder protection. We adopt an agency perspective of the firm to argue that the transfer of the bidder's better corporate governance to the target is reflected in the combined firm's higher governance quality.

[17] Gilson (2001) states that convergence can be functional, formal, or contractual, and Goergen and Renneboog (2008) document that firms can adopt better corporate governance practices through contractual devices.

The countries and firms are heterogenous in the quality of corporate governance (Doidge, Karolyi, and Stulz, 2007; Starks and Wei, 2013). Many studies show a considerable discrepancy in firm corporate governance between the merging firms (Klapper and Love, 2004; Martynova and Renneboog, 2008; Starks and Wei, 2013). Therefore, the on-going portability effect is not merely confined to country-level governance but can also result from a more pervasive shift in firm-level governance from the bidder to the target. Apart from the mandatory governance standards, firms can also adopt voluntary governance practices, which Chhaochharia and Laeven (2009) have shown to be rewarded with higher firm market value.

M&As offer an appropriate setting for studying transfers of acceptable corporate governance practices from bidders to targets. In the spirit of the portability theory of Ellis et al. (2017), we examine whether, *ceteris paribus*, the ex-post firm-level corporate governance of the combined firm is higher than the ex-ante weighted average governance of the bidder and target, in particular when the bidder-target governance gap is positive (i.e., the bidder has better firm-level governance than the target) before the acquisition. Poorly-governed targets pre-acquisition can benefit from the portability of corporate governance following an acquisition as they come under better-qualified management provided by the bidder.

Using a global sample of 837 full takeovers announced between 2003 and 2015, in which both bidders and targets are publicly traded, we examine whether combined firm's corporate governance standards change post-acquisition when bidders with better firm governance acquire targets with weaker governance. We measure firm governance using ASSET4 ESG[18] corporate governance attributes under categories of board structure, board function, compensation policy, shareholder rights, and construct governance indices of bidders and targets based on each category.[19] We find that the ex-post combined firm's corporate governance quality is significantly higher relative to the ex-ante weighted average governance of the bidder and target when the ex-ante bidder-target governance gap is positive. For example, the disparity in the ex-post board structure index of the combined firm versus the ex-ante weighted average of bidder and target firms index is 4.4 percentage points (pp) higher for deals where, before the acquisition, the bidder has a higher governance index than the

[18] Recently, the ASSET4 ESG updated the data. Using new governance categories and employing principal component analysis to construct the overall governance index, we show that our findings remain unchanged in the internet Appendix of Chapter 3.

[19] We calculate four governance indices named board structure index, board function index, compensation policy index, and shareholder rights index. Each index is defined as: sum of scores of all individual governance attributes in a category divided by the number of variables in a category. These indices are time-varying and have scores from 0 (lowest) to 100 (highest).

target. The results are in accordance with the portability theory and suggest a positive spillover effect of the bidder's corporate governance, as the combined firm reaches a higher governance standard than the average of the stand-alone firms.

We proceed to examine potential channels that can explain the positive impact of the ex-ante bidder-target firm governance gap on the combined firm's ex-post governance. To do so, we analyze four individual firm governance attributes that are well-established in the literature: board independence (Cotter, Shivdasani, and Zenner, 1997; Datta, Basuil, and Agarwal, 2020), audit committee independence (see Boone, Casares, Karpoff, and Raheja, 2007), stock compensation (Datta, Iskandar-Datta, and Raman, 2001) and equal treatment of minority shareholders (Doidge, Karolyi, and Stulz, 2007). The results show that these governance attributes are possible channels through which the combined firm's governance indices improve. We find a positive change in board independence of 7.72 pp following acquisitions where the pre-deal bidder-target board structure gap is positive. This result suggests that bidders with better governance practices related to their board structure can transfer those practices to the combined firm and overcome the target's pre-existing lower standards. Similarly, we find that audit committee independence, stock compensation, and minority shareholders protection are higher by 3.85, 6.50, and 1.01 pp subsequent to acquisitions with the positive bidder-target gap in board function, compensation policy, shareholder rights indices, respectively.

Finally, we investigate the impact of the bidder-target firm governance gap on ex-post change in the combined firm's operating performance relative to the ex-ante weighted average operating performance of bidder and target. We find that the firm governance gap between the bidder and target has a significantly positive effect on the change in combined firm's operating performance. This evidence is in line with the prior work (see, for example, Chemmanur, Jordan, Liu, and Wu, 2010; Core, Guay, and Rusticus, 2006) and supports the portability theory, suggesting that higher corporate governance brought about by relatively better-governed bidders improves operating performance after the acquisition.

This work is the first attempt to analyze how the ex-ante bidder-target governance gap affects changes in the average firm-level governance quality of the firms involved in M&As. We contribute to the M&A literature in two ways. First, we extend the work on corporate governance portability (Ellis et al., 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009) and knowledge transfer (Hitt, Hoskisson, and Ireland, 1990; Ranft and Lord, 2002) in M&As. We explore how bidders with higher pre-deal governance standards than the target can transfer their better practices to the combined

firm post-acquisition. Second, our work adds further support to the work on post-merger integration (Bresman, Birkinshaw, and Nobel, 1999; Heimeriks, Schijven, and Gates, 2012), governance convergence, and the importance of functional convergence (Goergen and Renneboog, 2008). This work suggests that firms engage in M&As intending to increase the average quality of the combined firm's corporate governance, which is an important source of synergies.

The remaining work is arranged as follows: in Section 3.2, we review the existing literature and develop the hypotheses; in Section 3.3, we describe the data and present the summary statistics; in Section 3.4, we describe the methodology; in Section 3.5, we discuss the main results; in Section 3.6, we analyze possible channels for better governance of the combined firm; in Section 3.7, we report changes in operating performance; in Section 3.8, we show robustness tests; and in Section 3.9, we conclude.

3.2 Literature review and hypotheses development

Post-merger integration is a key driver of M&As success (Heimeriks, Schijven, and Gates, 2012) that occurs on all facets of the newly combined firm. The integration depends on several factors (for a review see, Renneboog and Vansteenkiste, 2019), one of them being the pre-deal difference in corporate governance quality between combining firms. Pre-deal differences in firm-specific attributes, such as corporate governance and culture, can create knowledge transfer potential after the acquisition (Björkman, Stahl, and Vaara, 2007; Morosini, Shane, and Singh, 1998; Riikka and Vaara, 2010). While M&As are often motivated by the transfer of higher corporate governance standards from bidders to targets (see Ellis et al., 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009), the evidence on change in the combined firm's governance relative to average governance of merging firms is still limited.

Among other M&A motives, it has been examined that knowledge transfer is a crucial motive for M&As. For instance, Hitt, Hoskisson, and Ireland (1990) and Ranft and Lord (2002) find that knowledge-gaining through M&As has a positive effect on ex-post firm performance. More recently, Ellis et al. (2017) develop portability theory and posit that good country-level corporate governance standards are portable from bidders to targets through cross-border acquisitions. In full takeovers, Martynova and Renneboog (2008) and Bris and Cabolis (2008) find that the bidder's higher governance has a positive spillover effect. Wang and Xie (2009) show that the bidder's more substantial shareholder rights than the target generate higher combined announcement returns, suggesting that the target will adopt the bidder's shareholder rights after the acquisition. Thus, after an acquisition, the combined firm will benefit from the acquirer's higher governance quality.

The portability of better governance standards may not be restricted to country governance as there is considerable heterogeneity in firm governance between merging firms (Klapper and Love, 2004; Martynova and Renneboog, 2008; Starks and Wei, 2013). Several provisions in investor protection laws allow for some flexibility in adopting voluntary governance mechanisms – i.e., firm-level corporate governance practices (Alexandridis, Antypas, and Travlos, 2017; Black and Gilson, 1998) aimed at improving governance and conveying more confidence to the markets. Improvements in corporate governance result in a better interest alignment between managers and shareholders, which leads to better investment decisions made by companies, including the decisions regarding M&As.

The integration[20] processes are housed within the combined or bidder firm and take place on each aspect of firm characteristics. The bidder should effectively combine the capabilities of two entities for takeover value (Haapanen, Hurmelinna-Laukkanen, Nikkilä, and Paakkolanvaara, 2019) and the combined firm will reincorporate its operations and policies, including firm-level governance practices. A higher pre-deal strong corporate governance of the bidder in terms of balanced board structure, board activities effectivenes, better compensation policies, and better minority shareholder protection is transferred to the combined firm post-deal. The portability effect translates into governance convergence of the combined firm that is dominated by the higher governance standards of the bidder. Ralston, Holt, Terpstra, and Kai-cheng (2008) define convergence as "the procedure by which value systems of different countries become similar". We propose that governance convergence is a type of M&A integration where the corporate governance differences are reduced between merging firms. Thus, the combined firm's corporate governance quality is anticipated to be better than the stand-alone average of merging companies. Based on the discussion, we develop our first hypothesis as:

H1: Ex-post combined firm's corporate governance is expected to be higher than the ex-ante weighted average governance of the bidder and the target when bidder-target firm governance gap is positive, ceteris paribus.

The existing literature documents that firm-level governance mechanisms play an important role in affecting firm's operating performance (Bhagat and Bolton, 2008; Gompers et al., 2003; Klapper and Love, 2004; Yermack, 1996). For instance, Bhagat & Bolton (2008) show that CEO-Chairman separation, stock ownership of board members, and shareholder rights have positive impact

[20] Larsson and Finkelstein (1999) define integration as "the degree of interaction and coordination of the two firms involved in a merger or acquisition".

on company performance. Some other scholars report that firms with fewer ATPs or higher shareholder rights can positively affect operating performance (Chemmanur et al., 2010; Core, Guay, and Rusticus, 2006). Using Gompers, Ishhii, and Metrick (2003) index as a proxy for shareholder rights, Wang and Xie (2009) show that the operating performance of the combined firm increases with a higher difference between bidder and target indices.

An essential aspect of the pre-deal corporate governance difference between merging firms is that it can create complementarities (for instance, one firm's weakness is another firm's strength). Harrison, Hitt, Hoskisson, and Ireland (1991) provide evidence supporting complementarities and suggest that differences in resources (measured by capital, administrative, debt, and R&D expenditures) between merging firms positively affect the combined firm's operating performance. Capron (1999) argues that the utilization of resources from the bidder in the target firm post-acquisition contributes to the higher acquisition performance. Further, Capron and Pistre (2002) show that the bidder to target transfer of resources creates higher returns to bidder shareholders. In short, bidders tend to carry complementary capabilities to targets. Developing on this discussion, we hypothesize that:

H2: *Changes between the combined firm's operating performance and weighted average performance of the bidder and target are positively associated with the ex-ante bidder-target corporate governance gap.*

3.3 Data and summary statistics

We use Thomson Financial's Securities Data Corporation (SDC) to get a sample of completed M&As from 2003 to 2015. The bidder and target are public firms where the bidder acquires 100 percent stakes of the target. We apply various filters suggested in existing studies (Martynova and Renneboog, 2008; Wang and Xie, 2009) and eliminate deals if the bidder is either from financial (SIC codes 6000-6999) or utility industry (SIC codes 4900-4949). Since fewer deals in a country can add noise in the analysis, countries with less than five deals throughout the sample period are dropped. We get a final sample of 837 M&As from 17 countries.

Firm-level corporate governance data of the bidder and target are from the ASSET4 ESG database. The latest empirical work uses this database to measure the firm's governance quality (Doung, Kang, and Salter, 2015; Guney, Hernandez-perdomo, and Rocco, 2019; Tarmuji, Maelah, and Tarmuji, 2016). To identify corporate governance changes after the acquisition, we collect governance data one year before and after the deal. Financial statement data and country-level

governance data come from the Thomson Reuter's WorldScope database the World Bank database, respectively, as described in Appendix C.

We show the sample distribution by the bidder's country in Table 3.1, including the number of bidders, number of targets, and deal value. The leading countries in the international market of M&As are the United States[21], Canada, and Japan, which account for 41% of the sample. The United States is the leading country in the takeover market with 221 bidders that acquired 383 targets during the sample period. We observe considerable dispersion in terms of the number of bidders and targets per country.

Table 3.2 provides descriptive statistics of governance variables, deal characteristics, and firm characteristics used in this chapter. We observe that the ex-post combined firm's corporate governance quality is higher than the ex-ante weighted average of bidder and target, as shown in Panel A of Table 3.2. The change in a firm's corporate governance is our dependent variable in regression analysis and calculated using four governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. The average change in the score of the board structure index is 5.72, showing that the governance score of the combined firm is higher relative to the average governance score of combining firms. The ex-post governance quality of the combined firm in other governance is also higher than the pre-acquisition average of combining firms in these dimensions. The mean change in the combined firm's operating performance is -2%. Panel B reports the bidder-target corporate governance gap before the deal announcement, which is our key independent variable of interest. The mean bidder-target governance scores gap in board structure index, board function index, compensation policy index, and shareholder rights index is 42.30, 43.98, 42.61, and 44.19, respectively. This shows that, on average, bidders have better governance than targets before an M&A deal. Following Kaufmann, Kraay, and Mastruzzi (2009), we use World Governance Indicators (WGI) and construct the WGI index based on six attributes for bidder and target countries. Panel C shows that the average difference in the WGI index is 0.90, which corroborates the finding of Rossi and Volpin (2004) that acquirers relative to targets domicile in countries with stronger shareholder rights.

In Panel D of Table 3.2, we show that the majority of sample deals are domestic (68.7%); bidders are less likely to engage in the same industry (39.8%) and pay in stock (46%). To control for the combined firm characteristics in our regressions, we also include change in cash to assets ratio

[21] Although the US is dominating our sample, our results on the improvement in the combined firm's governance are still valid when we exclude deals made by the US bidders.

(ex-post combined firm cash to asset ratio minus the ex-ante weighted average cash to asset ratio of combining firms), cash divided by total assets; change in leverage (ex-post combined firm leverage minus ex-ante weighted average leverage of combining firms), long term debt scaled by assets; change in size (ex-post combined firm size minus ex-ante weighted average combining firms' size), the log of assets; change in Tobin's Q (ex-post combined firm Tobin's Q minus ex-ante weighted average Tobin's Q of combining firms), assets minus equity's book value plus equity's market value scaled by assets. Panel E shows that the combined firm has average cash to asset ratio of -0.012, leverage of 0.029, size of 0.557, and Tobin's Q of 0.033 in the year after deal completion.

We show Pearson correlation coefficients across our variables in Table 3.3. We observe that the pre-deal bidder-target firm governance gap in our governance indices is positively correlated with the combined firm's ex-post change in these governance indices. We further find that the differences in the four corporate governance indices are highly correlated.

3.4 Methodology

3.4.1 Measure of firm corporate governance

We use governance scores from the ASSET4 ESG database to measure the governance quality of the bidder and target firms. This database rates firms on 250 key performance indicators grouped into four major categories of performance: social, corporate governance, environmental, and economic. To compile the governance scores, ASSET4 ESG uses data from the firm's annual reports and regulatory filings and assigns a percentage score to each governance attribute that comes under one of the following four governance categories:

(1) Board structure – reflects the firm's commitment towards balance board structure policies through an independent, diverse, and experienced board.[22]

(2) Board function – shows the firm's dedication and effectiveness towards formulating important board committees with assigned responsibilities and tasks.[23]

(3) Compensation policy – presents the firm's commitment towards making manager's compensation policies in financial and non-financial terms.[24]

[22] Based on information from the firm's annual reports and regulatory filings, ASSET4ESG assigns the scores to board structure attributes depending on answers to questions such as: Does the company describe every board member's professional experience or skills? Does the CEO is also chairman of the board?

[23] The score of board function attributes is based on questions: Does the firm show board meetings information? Does the firm require non-executives for audit committees?

[24] Governance attributes incorporated into the compensation policy are assigned scores based on questions like Does the firm shares executives' compensation information? Does the firm describe compensation policy implementation?

(4) Shareholder rights – documents the firm's commitment towards defining equal rights for the majority and minority shareholders?[25]

We use 55 individual firm governance attributes[26] with scores between 0 (minimum) to 100 (maximum). A non-zero score shows the firm's commitment and dedication towards a particular firm governance attribute. To capture each governance mechanism's relative quality, we use collective measures as it is common in the literature (Ammann, Oesch, and Schmid, 2011; Bebchuk, Cohen, and Ferrell, 2009). We calculate the average score of all governance attributes under each category to develop four governance indices[27] – board structure index, board function index, compensation policy index, and shareholder rights index, for both bidders and targets. Our key independent variable (bidder-target firm governance gap) is the disparity in governance indices of the bidder and the target one year before the deal. A positive gap means that the bidder's governance is better than the target. Measuring the bidder-target gap in four firm governance mechanisms permits to know the scope of firm governance portability through M&As. Our dependent variable is the change in combined firm governance, defined as the ex-post combined firm's governance index minus the ex-ante weighted average (weights depend on the equity's market value) index of the bidder and target.

Before we proceed, it is essential to explain how we measure the combined firm's governance, operating performance, and other firm characteristics. Ideally, we want to compute the change in combined firm governance by comparing the weighted average governance of bidder and target before and after the acquisition. However, the unavailability of the target's data after the acquisition makes this analysis impossible. After the successful deal, the targets frequently delist from the stock exchanges. We are considering full takeovers, and after the acquisition, the combined firm comes under the bidder's influence. Therefore, the combined firm's information comes from the post-deal bidder's data. Following Wang and Xie (2009), we use the weighted average for the pre-deal combined firm and compute required variables.

3.4.2 Model specification and variable definitions

To test *H1*, we estimate the following model:

$$\Delta\, Combined\ CG_{i,j,t-1\ to\ t+1} = \alpha + \beta_1 BT\ GAP_{i,j,t-1} + \beta_2 Country\ CG\ GAP_{i,j,t-1} + \sum \beta_m Deal\ \ controls_{i,t} + \sum \beta_n\, \Delta\, Firm\ controls_{k,t-1\ to\ t+1} + \lambda_t + \eta_j + \gamma_c + \varepsilon_{i,t} \quad (1)$$

[25] Governance attributes considered in the shareholder rights category are assigned scores based on answers to questions: Are the firm's statutes available to the public? Does the firm describe the implementation of its shareholder rights policy?

[26] In robustness tests, we use the most relevant governance attributes and develop different governance indices.

[27] These indices are time-varying and capture the gap in the governance quality between bidders and targets. Each governance index is calculated by adding up scores of each governance attribute in a category provided by ASSET4 ESG and dividing by the number of variables in a category.

where Δ Combined $CG_{i,j,t-1\ to\ t+1}$ is the ex-post $(t+1)$ change in combined firm governance index score compared to the weighted average governance index score of bidder and target for the deal *i* in industry *j*; α is the intercept; $BT\ GAP_{i,j,t-1}$ is a dummy variable with the value of one if the pre-deal $(t-1)$ bidder-target firm governance gap is positive and zero otherwise for the deal *i* and industry *j*. $Country\ CG\ GAP_{i,j,t-1}$ is the bidder-target country governance gap for deal *i* and industry *j* one year before the deal; $Deal\ \ controls_{i,t}$ is a vector of deal-specific controls for the deal *i* and year *t.* The deal specific-controls include: same industry deal, a dummy variable that is equal to one if the merging firms belong to the same Fama-French industry category and zero otherwise; payment method, an indicator variable equals one for cash-financed deals and zero otherwise; cross-border deal, a binary variable having a value of one if the deal is conducted cross the border and zero otherwise. $\Delta\ Firm\ controls_{k,t-1\ to\ t+1}$ is a vector of change in firm-specific controls for the combined firm *k* relative to the weighted average of merging firms and includes: change in cash to asset ratio, change in the leverage ratio, change in Tobin's Q, and change in size. To control omitted factors that can influence the combined firm governance, we add dummies for the year, λ_t, industry, η_j, and country, γ_c. We use Fama-French 48 industry categories for the industry dummies. The firm-specific variables are winsorized by 1% from the bottom and the top for mitigating the effect of outliers.

3.5 Main results

3.5.1 Univariate tests

We first perform univariate tests to examine how the bidder-target governance gap affects the combined firm's ex-post governance change. We split the sample into two groups: the positive governance gap group (the bidder's governance is higher than the target's governance) and the negative governance gap group (the target's governance is higher than the bidder's governance), as shown in Table 3.4. We examine the ex-post changes in the scores of four indices: board structure index, board function index, compensation policy index, and shareholder rights index. Considering our first hypothesis (*H1*), we expect that if the pre-deal bidder-target firm governance gap is positive, then the ex-post combined firm's governance should be higher than the ex-ante average governance of the merging firms because of the portability of the bidder's higher governance quality to the target.

We use a two-tailed t-test in Panel A of Table 3.4 that examines the difference in means between the group of positive governance gap and the group of negative governance gap. There are 749 (89%) deals out of 837, with a positive bidder-target board structure gap. One can raise the issue

that our sample is uneven, but it is well-established that bidders have higher pre-deal governance quality than targets (Bris, Brisley, and Cabolis, 2008; Martynova and Renneboog, 2008; Rossi and Volpin, 2004). We observe that the average ex-post change in the combined firm board structure score is 6.19 and 1.70 for the groups of the positive and the negative bidder-target board structure gap, respectively, and the reported difference is significant at the 1% level. We see a similar pattern in the ex-post changes in the combined firm's governance for positive groups of bidder-target board function, compensation policy, and shareholder rights.

Panel B of Table 3.4 shows the median change in governance scores of each index using the Wilcoxon rank-sum test that examines the differences in medians between the group of positive pre-deal governance gap and the group of negative pre-deal governance gap. Our results reveal a positive change in governance quality post acquisition when the bidder-target governance gap is positive before acquisition, which is in line with the idea of portability of the bidder's higher governance standards to the target. After observing a positive pattern in ex-post quality of the combined firm's governance in both univariate tests, we further examine the reported relationship in a multivariate framework in the following section that takes several deal and firm characteristics into consideration.

3.5.2 Changes in the combined firm's governance

This section tests whether the pre-deal governance gap between bidder and target affects the post-deal governance quality of the combined firm using four governance indices – board structure index, board function index, compensation policy index, and shareholder rights index. Previous studies (Ellis et al., 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009) have found evidence that corporate governance is transferable from bidders to targets when the latter has weaker governance and suggest that the target will adopt better governance of the bidder after the acquisition. To test our first hypothesis (*H1)*, we perform regression analysis separately for each governance index because they are highly correlated. We estimate cross-sectional regressions of changes in governance quality around the deal on the ex-ante bidder-target gap in governance indices along with a set of controls. In all models of Table 3.5, we use a dummy variable for governance gap between the bidder and target that equals one when the governance gap is positive (bidder index - target index > 0) and zero otherwise.[28]

Table 3.5 examines the effect of the bidder-target board structure gap on the change between the ex-post combined firm's governance quality and the ex-ante weighted average governance quality

[28] In our robustness tests, we use actual gap in governance indices between the merging firms and results remain qualitatively unchanged.

of bidder and target. The dependent variable is the ex-post change in the combined firm's governance index relative to the ex-ante weighted average of the bidder's governance index and target. The key variable of interest is the bidder-target gap dummy one year before the announcement day. The parameter estimates of the variable of interest in Models (1)-(4) show that the change in ex-post combined firm's governance indices relative to ex-ante weighted average governance indices of bidder and target firms is 4.4 to 6.26 percentage points (pp) higher for the positive bidder-target gap (bidder governance index is higher than target governance index) than the negative bidder-target gap (target index is higher than bidder index).

The results corroborate *H1* that the ex-post combined firm's governance is significantly higher relative to the ex-ante weighted average governance of the bidder and target when the bidder-target governance gap is positive prior to the acquisition. Our results support the portability theory of Ellis et al. (2017) and suggest a positive spillover effect of the bidder's corporate governance, as the combined firm reaches a higher governance standard than the average governance of the merging firms. The findings show that a positive bidder-target governance gap create the bidder's governance transfer potential to the target. After a successful acquisition, the bidder applies its higher governance standards on the combined firm for achieving optimal governance performance. The findings exist for different subsamples and alternative governance measures.

In line with existing work on governance transfer from the bidder to target (see Ellis et al., 2017; Martynova and Renneboog, 2008; Wang and Xie, 2009), we provide evidence that bidders with higher firm governance standards than targets before an acquisition bring, on average, positive change in the quality of the combined firm governance. Our results support the studies on knowledge transfers through M&As when pre-deal differences in firm-specific attributes exist (Björkman, Stahl, and Vaara, 2007; Morosini, Shane, and Singh, 1998; Riikka and Vaara, 2010). The results also support the view that post-merger integration is an essential feature of M&As success (Heimeriks, Schijven, and Gates, 2012). It depends on several factors (see, Renneboog and Vansteenkiste, 2019) and occurs on all new firm facets. Overall, the results extend the portability theory application from combined firm's returns to governance changes.

All regression models in Table 3.5 include control variables. To measure the bidder-target gap in the country-level governance, we use World Bank's Governance Indicators (see Kaufmann, Kraay, and Mastruzzi, 2009). The indicators vary with time and measure how well a nation overcomes corruption, government effectiveness, regulatory quality, the rule of law, political stability, and the citizens' freedom for electing a government. We calculate the mean index (WGI index) based on

these six attributes for each country. The WGI gap is the disparity between the acquirer WGI index and the target WGI index. The coefficients on the WGI gap are positive except Model (2), albeit insignificant. We also add some deal-specific characteristics – same industry deal, payment method, cross-border deal; and the combined firm characteristics – change in cash to asset ratio, change in leverage ratio, change in size, change in Tobin's Q. We observe that the statistical significance and the magnitude of estimated coefficients on these variables are fairly same across all models in Table 3.5. In particular, we find that the combined firm's governance change is significantly higher when the change in combined firm size and leverage are larger.

3.6 Channels of higher combined firm governance

So far, the results suggest that the combined firm's governance is higher when the pre-deal bidder's governance quality exceeds that of the target. We now examine the probable channels through which the bidder-target governance gap affects the combined firm's governance. We follow existing studies to establish the possible channels, for instance, board independence (Byrd and Hickman, 1992; Cotter, Shivdasani, and Zenner, 1997), audit committee independence (see Boone et al., 2007), stock compensation (Datta, Iskandar-Datta, and Raman, 2001), and protection of minority shareholders (Doidge, Karolyi, and Stulz, 2007), are important firm governance attributes that are more likely to show better governance of the combined firm. Based on these studies, the change in these four individual governance attributes should be more significant for the combined firms that positively change governance quality.

We test whether the governance attributes changes are linked with the governance indices changes. We create a binary variable equals one if the change in combined firm's governance index is positive and zero otherwise. We use the actual percentage of board independence from WorldScope to measure board independence, and for the other three attributes, we use governance scores from ASSET4ESG. We present the summary statistics, the univariate analysis, and the multivariate analysis on the changes in governance attributes for a detailed analysis.

In Panel A of Table 3.6, we show the summary statistics of four individual firm governance attributes. The results show a positive change in each governance attribute: board independence, audit committee independence, stock compensation, and policy for equal treatment of minority shareholder rights, increase by 5.86%, 1.24%, 1.85%, and 0.47%, respectively. It shows that the quality of individual governance attributes is higher after the acquisition.

We further conduct univariate tests using two-tailed t-tests to examine if there is a difference in governance attributes changes for two groups of combined firms that show higher governance

quality following an acquisition and those who do not. The individual firm governance attributes – board independence, audit committee independence, stock compensation, and policy for equal treatment of minority shareholder rights are related to our board structure index, board function index, compensation policy index, and shareholder rights index. Therefore, the group of a positive change in each governance index is linked to the change in their respective individual governance attribute. Panel B of Table 3.6 shows positive changes in all governance attributes that are significant at 1% level. For instance, there are 566 (72%) deals out of 788 deals with the positive change in board structure index, and we find that the average change in board independence after the acquisition is 8.15 for the group of positive change in combined firm board structure index while it is 0.015 for negative subsample. The observed pattern is similar to other firm governance attributes.

To test the effect of change in the combined firm governance index on change in its respective individual firm governance attribute, we estimate the following model:

$$\Delta\, CIG_{i,j,t-1\ to\ t+1} = \alpha + \beta_1\, High\ CG_{i,j,t-1\ to\ t+1} + \sum \beta_2\, \Delta\, Firm\ controls_{k,t-1\ to\ t+1} + \\ + \lambda_{\,t} + \eta_{\,j} + \gamma_{\,c} + \varepsilon_{i,t} \qquad (2)$$

where $\Delta\, CIG_{i,j,t-1\ to\ t+1}$ is the combined firm's change in individual governance attribute one year after $(t+1)$ the acquisition relative to weighted average individual governance attributes of the acquirer and target one year prior to the acquisition $(t-1)$ for the deal *i* in industry *j*; α is the intercept; $High\ CG_{i,j,t-1\ to\ t+1}$ is a binary equals one for the combined firms that show a positive change in governance indices and zero otherwise. $\Delta\, Firm\ controls_{k,t-1\ to\ t+1}$ is a vector of change in firm-specific controls for the combined firm *k* relative to weighted average of bidder and target during one year prior to one year after the deal and includes: sales growth (post-acquisition sales minus pre-acquisition sales scaled by pre-acquisition sales); change in leverage (ex-post leverage minus ex-ante leverage), debt divided by assets; change in size (ex-post size minus ex-ante size), log assets; change in Tobin's Q (ex-post Tobin's Q minus ex-ante Tobin's Q), assets minus equity's book value plus equity's market value divided by assets; change in research and development expense (ex-post R&D minus ex-ante R&D); change in board size (ex-post board size minus ex-ante board size), number of directors on the board. Like before, we use industry, year, and country dummies and winsorize firm-specific variables by 1% from the top and bottom.

The key variable of interest here is the $High\ CG_{i,j,t-1\ to\ t+1}$ that has a significantly positive coefficient in all models. Model (1) in Panel (C) of Table 3.6 shows that, on average, post-acquisition board independence is higher by 7.72 pp for combined firms with a higher board structure index relative to those that do not. It shows that board independence is an important channel to ensure a

balanced board structure in the combined firm. We endorse the monitoring role of board independence (Coles, Daniel, and Naveen, 2008; Linck, Netter, and Yang, 2008). These authors accentuate the idea that companies with dissimilar nature of businesses and terrestrially scattered functions should benefit more from independent boards. The result of Model (2) of Panel (C) reports that, on average, post-acquisition audit committee independence is higher by 3.85 pp for combined firms that have a higher board function index, suggesting that audit committee independence is an essential channel for effective board functions. The result supports the movement toward particular board guidelines (see Denis and Mcconnell, 2003). For example, the Sarbanes-Oxley Act of 2002 requires that boards should have only independent audit committees. Model (3) of Panel (C) shows that, on average, stock compensation is higher by 6.5 pp subsequent to acquisition for combined firms that improved their compensation policy index than those that do not, suggesting that stock option program is an important channel for enhancing compensation policies, echoing earlier findings on equity-based compensations (Baker, Jensen, and Murphy, 1988; Datta, Iskandar-Datta, and Raman, 2001; Harford and Li, 2007). Lastly, Model (4) of Panel (C) shows that, on average, ex-post minority shareholder protection is higher by 1 pp for combined firms that increased their shareholder rights index compared to those that do not, indicating that equal treatment of minority shareholders is an important channel for enhancing shareholder rights.

We find that the combined firm's better corporate governance after the acquisitions derives from higher independence of audit committee, independent boards, stock option compensation, and equal treatment of minority shareholders. Therefore, these are important channels through which combined firms increase their governance quality during the post-deal stage.

3.7 Post-acquisition operating performance

We next test our second hypothesis (*H2*) to examine whether the operating performance between the combined firm and the weighted average of bidder and target improves post-acquisition when better- governed bidders acquire badly-managed targets. Toward that end, we check the effect of the bidder-target governance gap on the operating performance changes before and after an M&A deal. Following Healy, Palepu, and Ruback (1992), Wang and Xie (2009), and Alexandridis et al. (2013), we employ the ratio of operating income to book value of assets as a measurement of operating performance (ROA). To capture the potential effects of industry and country-wide factors, we compute the combined firm's industry-adjusted operating performance as its ROA minus other companies median operating performance in the same Fama-French industry and country. The pre-deal industry-adjusted ROA of the acquirer and target is calculated in the same way and then compute

the weighted average operating performance of the acquirer and target. The weights are assigned on the basis of equity's market value. Finally, we compute change in operating performance as ROA of the combined firm minus weighted average ROA of the bidder and target.

To test the impact of bidder-target governance gap on operating performance change between the combined firm and weighted average of acquirer and target, we estimate the following model:

$$\Delta\ Combined\ OP_{i,j,t-1\ to\ t+1} = \alpha + \beta_1 BT\ GAP_{i,j,t-1} + \beta_2 Country\ CG\ GAP_{i,j,t-1} + \\ + \sum \beta_m Deal\ \ controls_{i,t} + \sum \beta_n\ \Delta\ Firm\ controls_{k,t-1\ to\ t+1} \\ + \lambda_{\ t} + \eta_{\ j} + \gamma_{\ c} + \varepsilon_{i,t} \quad (3)$$

where Δ Combined $OP_{i,j,t-1\ to\ t+1}$ is the combined firm's change in industry-adjusted ROA compared to weighted average ROA of the acquirer and target from $t-1$ (one year before the deal) to $t+1$ (one year after the deal) for deal *i* in industry *j*. $BT\ GAP_{i,j,t-1}$ is a binary variable with value of one if the pre-deal bidder-target firm governance gap is positive and zero otherwise for deal *i* and industry *j*. $Country\ CG\ GAP_{i,j,t-1}$ is the bidder-target country governance gap for deal *i* and industry *j* one year before the deal; $Deal\ \ controls_{i,t}$ is a vector of deal-specific controls for deal *i* and year *t.* The deal specific-controls include same industry deal, payment method, and cross-border deal. $\Delta\ Firm\ controls_{k,t-1\ to\ t+1}$ is a vector of change in firm-specific controls for the combined firm *k* relative to weighted average of the acquirer and target from the year prior to the year after the deal and includes: change in cash to asset ratio, change in leverage ratio, change in size, and change in Tobin's Q.

Our key variable of interest is the $BT\ GAP_{i,j,t-1}$ that shows significantly positive effect on the post-acquisition change in operating performance in all models. It suggests that the post-acquisitions operating performance is higher when bidders have better governance than targets prior to an acquisition. For example, the estimated coefficient on the bidder-target gap in Model (1) of Table 3.7 shows that the average change in operating performance is 1.9 pp higher for the positive bidder-target board structure gap than the negative bidder-target board structure gap. We find similar results for other governance indices. The results support studies documenting higher operating performance post-acquisition (see Ghosh, 2001; Healy, Palepu, and Ruback, 1992), and that higher shareholder rights positively affect operating performance (Chemmanur et al., 2010; Core, Guay, and Rusticus, 2006). The results in this section extend the findings of Wang and Xie (2009) and show that apart from the shareholder rights difference, other governance mechanisms positively affect the combined firm's operating performance. These results provide further support to the portability of bidder's

higher governance standards, suggesting that the bidder-target governance gap is a source of higher ex-post operating performance.

3.8 Robustness tests

This section discusses several robustness tests to better understand the positive impact of the bidder-target governance gap on the ex-post change in combined firm governance and operating performance.

In the first set of tests, we replace our bidder-target governance gap measure with alternative measures: an average governance index (Model 1 and 6), the sum of four governance indices divided by four; governance indices based on the principal component analysis (PCA). We keep the first component having the Eigenvalue of greater than one and compute the bidder-target gap as PCA index score of the bidder minus PCA index score of the target using four governance mechanisms discussed above. Each of the ten regressions uses bidder-target governance gap measure with the control variables and results are shown in Panel A of Table 3.8. In each regression, the coefficient on the bidder-target gap measure is positive, showing that the positive spillover of the bidder's governance translates into the higher governance quality and operating performance of the combined firm.

In majority stake acquisitions, bidders can transfer their higher governance standards to the targets (Ellis et al., 2017; Wang and Xie, 2009). Therefore, in the second set of robustness tests, we apply our work on majority-control acquisitions (before the acquisition, the bidder owns less than 50% shares of the target and ends up with more than 50% after the acquisition). To test the change in the combined firm's governance in majority control acquisitions, we estimate equation (1) for deals where the bidder acquires more than 50% shares of the target. The results in Panel B of Table 3.8 are similar to those for the full takeover sample in Table 3.5. The coefficients on our key variable of interest (i.e., bidder-target gap) are positive and significant. We show that the combined firm governance and operating performance are higher when the bidder-target governance gap is positive. We argue that the portability of the acquirer's higher governance standards to the target is not restricted to full takeovers, but it can also affect in the same way when bidders acquire the majority stake of targets. As a further robustness test, we report regression results for the change in combined firm governance and operating performance around the financial crisis of 2008. We estimated our regressions over two sample periods, from 2003 to 2009 and from 2010 to 2015. After the financial crisis of 2008, firms improved both mandatory and voluntary corporate governance mechanisms to increase their market value and convey confidence to the general public (Alexandridis, Antypas, and

Travlos, 2017). If the governance improvement during the post-financial crisis period holds, we should observe a higher change in combined firm governance after the financial crisis than before when bidders have better pre-deal governance than targets. In Panel C of Table 3.8, we show the results of testing the financial crisis story. We find that the combined firm's governance and operating performance are higher and statistically significant in the subsample of acquisitions after 2009 than before.

The bidders from the U.S. dominate our sample (41.6%), as shown in Table 3.1. To confirm that our findings are not due to the U.S., we re-estimate models in Table 3.5 after dropping all deals by the U.S. bidders. The results documented in panel D of Table 3.8 (Models 1-8) report that our findings are not restricted to the U.S. Taking together, our results show that the combined firm's governance and operating performance are significantly higher where the pre-deal bidder-target governance gap is positive.

3.9 Conclusion

We study the change in the ex-post governance quality of the combined firm relative to the ex-ante weighted average governance of the bidder and target when the quality of the bidder's firm-level governance is higher than the target. To measure the quality of firm governance, we use four essential mechanisms: board structure, board function, compensation policies, and shareholder rights. We find that when the bidder-target governance gap is positive before the acquisition, the ex-post combined firm's governance is better than the ex-ante weighted average governance of combining firms. We further find that the combined firm's better governance appears to stem from increased board independence, audit committee independence, stock compensation, and minority shareholder protection after the acquisition. Additionally, the impact of the bidder-target governance gap on the combined firm's operating performance relative to the weighted average operating performance of merging firms is higher.

Overall, the findings support the portability theory of Ellis et al. (2017) and suggest a positive spillover effect of the bidder's firm governance, as the combined firm reaches a higher governance standard than the average of merging firms. We show that the pre-deal governance gap between bidders and targets brings governance transfer opportunity through M&As. Our results are not because of the firm-level governance acting as a proxy for the country-level governance. We control for the bidder-target country governance gap in all our regression analyses, and results on the higher ex-post governance standards of the combined firm still hold.

Table 3.8: Distribution by the bidder's country

This table shows the sample distribution of M&As by the bidder's country. The sample comprises 531 bidder firms that acquired 837 targets between 2003 and 2015 with a total deal value of 42000 million US dollars. Both bidders and targets are public firms covered by the ASSET4ESG database before and after an M&A deal.

Bidder's country	No. of bidder firms	No. of target firms	Deal value ($ millions)
Australia	47	64	1247
Canada	67	119	1180
Denmark	6	8	1936
Finland	3	6	1584
France	21	36	3114
Germany	13	16	3837
India	7	8	1222
Israel	3	9	3413
Italy	8	9	2828
Japan	59	74	828
Netherlands	9	17	1897
South Africa	5	5	537
Spain	6	6	8088
Sweden	11	16	1001
Switzerland	14	23	4310
United Kingdom	31	38	1095
United States	221	383	3883
Total	531	837	42000

Table 3.9: Descriptive statistics

This table contains descriptive statistics of changes in the combined firm's ex-post corporate governance relative to an ex-ante weighted average of bidders and targets. The sample covers 837 full takeover deals between 2003 and 2015 from Securities Data Corporation (SDC). Both bidders and targets are public firms, and their firm corporate governance data are from the ASSET4ESG database before and after an M&A deal. To measure firm-level corporate governance, we use four governance indices for bidders and targets: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are time-varying and have a percentage score from 0 (lowest) to 100 (highest). Definitions of all variables are described in Appendix B and Appendix C.

Variables	N	Mean	Median	S.D.	Min	Max
Panel A: Change in combined firm's governance relative to weighted average of combining firms						
Δ Board Structure	837	5.724	3.952	8.972	-13.633	52.146
Δ Board Function	837	5.443	3.208	9.914	-24.256	59.556
Δ Compensation Policy	837	6.1	4.162	9.482	-22.861	58.757
Δ Shareholder Rights	837	3.499	1.736	9.127	-19.428	45.774
Δ Operating performance	725	-0.020	-0.009	0.069	-0.360	0.507
Panel B: Bidder-Target governance gap						
Board Structure gap	837	42.303	51.92	25.462	-67.844	71.03
Board Function gap	837	43.982	58.729	27.958	-65.987	76.066
Compensation Policy gap	837	42.612	54.072	25.214	-62.631	71.948
Shareholder Rights gap	837	44.186	52.67	24.527	-63.206	71.611
Panel C: Bidder-target Country governance gap						
World Governance Indicators gap	837	.899	0	9.012	-42.474	92.558
Panel D: Deal characteristics						
Payment method (dummy)	837	.541	1	.499	0	1
Cross-border deal (dummy)	837	.313	0	.464	0	1
Same industry deal (dummy)	837	.398	0	.49	0	1
Panel E: Change in combined firm characteristics						
Δ Cash to asset ratio	837	-.012	-.006	.076	-.482	.354
Δ Leverage	837	.029	.02	.105	-.389	.53
Δ Size	837	.557	.41	.652	-1.136	8.888
Δ Tobin's Q	837	.033	.032	.138	-.703	1.315

Table 10.3: Correlation matrix

This table shows the correlation among the combined firm's change in corporate governance and operating performance (dependents), firm corporate governance gap variables (independents), deal characteristics, and change in combined firm characteristics used in our regression analysis. Our sample contains 837 full takeovers deals listed in Securities Data Corporation (SDC) announced between 2003 and 2015. Both bidders and targets are public firms with available firm governance data from ASSET4ESG before and after an M&A deal. Definitions of all variables are described in Appendix B and Appendix C.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	1																
2	0.76***	1															
3	0.66***	0.69***	1														
4	0.65***	0.64***	0.64***	1													
5	-0.04	-0.07	-0.01	-0.04	1												
6	0.11**	0.09*	0.15***	0.07*	0.08*	1											
7	0.16***	0.09*	0.16***	0.10**	0.08*	0.94***	1										
8	0.16***	0.11**	0.13***	0.12***	0.08*	0.93***	0.94***	1									
9	0.20***	0.14***	0.15***	0.08*	0.13***	0.88***	0.87***	0.86***	1								
10	0.02	-0.01	0.02	-0.00	0.03	0.06	0.06	0.07*	0.06	1							
11	-0.20***	-0.26***	-0.19***	-0.28***	0.15***	0.20***	0.19***	0.18***	0.15***	0.06	1						
12	-0.05	-0.02	-0.01	-0.01	0.05	-0.11**	-0.10**	-0.07	-0.08*	0.12***	0.26***	1					
13	0.06	0.04	0.03	0.12***	-0.05	-0.03	-0.01	-0.01	-0.08*	-0.09*	-0.20***	-0.03	1				
14	-0.00	-0.01	0.01	0.00	0.16***	-0.01	-0.00	-0.00	0.03	0.00	0.03	-0.01	-0.08*	1			
15	0.03	-0.01	0.01	-0.03	-0.18***	0.01	0.00	0.01	-0.02	0.00	0.17***	0.03	-0.09*	0.03	1		
16	0.27***	0.26***	0.30***	0.32***	-0.15***	-0.17***	-0.14***	-0.15***	-0.15***	-0.02	-0.30***	-0.07	0.19***	-0.10**	0.03	1	
17	0.01	-0.02	0.02	-0.07	-0.09**	0.09**	0.11**	0.10**	0.09*	0.02	0.16***	0.02	-0.05	-0.03	0.69***	0.09*	1

(1) Δ Board Structure (t-1, t+1)
(2) Δ Board Function (t-1, t+1)
(3) Δ Compensation Policy (t-1, t+1)
(4) Δ Shareholder Rights (t-1, t+1)
(5) Δ ROA (t-1, t+1)
(6) Board Structure gap
(7) Board Function gap
(8) Compensation Policy gap
(9) Shareholder Rights gap
(10) World Governance Indicators gap
(11) Payment method (dummy)
(12) Cross-border deal (dummy)
(13) Same industry deal (dummy)
(14) Δ cash to asset ratio
(15) Δ Leverage
(16) Δ size
(17) Δ Tobin's Q

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

Table 3.11: Univariate analysis on bidder-target corporate governance gap

This table shows the univariate tests of the effect of bidder-target firm governance gap dummy on change in ex-post combined firm governance relative to ex-ante weighted average governance of combining firms. Our sample consists of 837 full takeover deals listed in Securities Data Corporation (SDC) announced between 2003 and 2015. Both bidders and targets are public firms with available firm corporate governance data from ASSET4ESG before and after an M&A deal. Our variable of interest ("Bidder -Target governance gap dummy") is equal to one if the firm-level corporate governance index of the bidder is higher than the firm-level corporate governance index of the target and zero otherwise. We use four governance indices for bidders and targets: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are time-varying and have a percentage score from 0 (lowest) to 100 (highest). The p-value from two-tailed t-tests are shown in the last column for both positive (Bidder governance > Target governance) and negative (Bidder governance < Target governance) governance gap in Panel A. In Panel B, we show the Wilcoxon rank-sum test results including the number of observations, median values, and z-statistics associated with differences in medians between the positive and negative groups of governance gap. Definitions of all variables are described in Appendix B and Appendix C.

Panel A: Bidder-target governance gap	Positive governance gap		Negative governance gap		Two tailed t-test	
	N	Mean	N	Mean	Difference	p value
Δ Board Structure of combined firm	749	6.196	88	1.709	4.487	0.000
Δ Board Function of combined firm	739	5.826	98	2.553	3.273	0.000
Δ Compensation Policy of combined firm	753	6.515	84	2.377	4.138	0.000
Δ Shareholder Rights of combined firm	746	3.950	91	-0.196	4.146	0.000
Panel B: Bidder-target governance gap	Positive governance gap		Negative governance gap		Wilcoxon rank-sum test	
	N	Median	N	Median	z-statistics	p value
Δ Board Structure of combined firm	749	4.346	88	-0.408	5.517	0.000
Δ Board Function of combined firm	739	3.528	98	1.505	3.861	0.000
Δ Compensation Policy of combined firm	753	4.610	84	0.553	4.966	0.000
Δ Shareholder Rights of combined firm	746	2.102	91	-0.638	5.562	0.000

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 3.12: Change in the combined firm's governance

This table shows results from the ordinary least square (OLS) regressions of the effect of the bidder-target governance gap on the ex-post change in combined firm's governance relative to ex-ante weighted average governance of combining firms. The sample consists of 837 full takeover deals listed in Securities Data Corporation (SDC) between 2003 and 2015. Both the bidder and target are covered by the ASSET4ESG database before and after an M&A deal. The dependent variable is the ex-post change in the combined firm's governance relative to the ex-ante weighted average of the bidder and target. The variable of interest ("Bidder-target governance gap") is the pre-deal firm-level corporate governance gap between the bidder and the target governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are based on 55 firm governance attributes divided into four categories in the ASSET4 ESG database and have a percentage score from 0 (lowest) to 100 (highest). We use a dummy variable for the governance gap between the bidder and target that equals one when the governance gap is positive (bidder index - target index > 0) and zero otherwise in all our models. All variables are defined in Appendix B and Appendix C. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.*, ** and *** show statistical significance level at 10%, 5% and 1% respectively. We report T-statistics in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980).

Dependent variable: Δ combined firm's governance	(1) Board Structure	(2) Board Function	(3) Compensation Policy	(4) Shareholder Rights
Bidder-target gap dummy	4.4066***	4.6975***	4.9848***	6.2693***
	(3.767)	(4.026)	(4.129)	(5.639)
WGI gap	0.0277	-0.0042	0.0304	0.0058
	(0.720)	(-0.088)	(0.876)	(0.222)
Payment method dummy	-2.5594***	-5.0044***	-3.2658***	-4.3993***
	(-3.190)	(-5.588)	(-3.921)	(-5.701)
Cross-border dummy	0.8189	1.9592**	0.9451	0.9978
	(0.970)	(1.986)	(1.038)	(1.206)
Same industry dummy	0.0091	-1.1183	-0.9071	0.3039
	(0.012)	(-1.418)	(-1.232)	(0.431)
Δ Cash to asset ratio	-0.0541	-4.2858	-0.3243	0.9884
	(-0.013)	(-0.969)	(-0.073)	(0.233)
Δ Leverage	10.9484**	10.7943*	6.0735	8.0279
	(2.098)	(1.768)	(1.075)	(1.470)
Δ Size	2.9913***	3.1714***	3.6447***	3.7489***
	(4.734)	(3.010)	(5.024)	(4.992)
Δ Tobin's Q	-6.0749*	-7.2555*	-4.5231	-9.3039**
	(-1.827)	(-1.929)	(-1.296)	(-2.497)
Year, industry, and country dummies	Yes	Yes	Yes	Yes
N	837	837	836	833
R^2	0.2683	0.2794	0.2686	0.3363

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 3.13: Channels of the higher combined firm's governance

The sample consists of full takeover deals listed in Securities Data Corporation (SDC) between 2003 and 2015. The ASSET4ESG database covers both the bidder and target before and after the M&A deal. Panel A shows summary statistics of change in individual firm governance attributes: board independence, audit committee independence, stock compensation, and policy for equal treatment of minority shareholders from t-1 to t+1 around the announcement date. Panel B shows univariate tests of the effect of positive change in combined firm governance on change in individual firm governance attributes from t-1 to t+1 around the announcement date. The change in combined firm governance is an indicator variable that equals one for combined firms with higher governance quality in terms of board structure index, board function index, compensation policy index, and shareholder rights index after the acquisition and zero otherwise. Panel C shows results from the ordinary least square (OLS) regressions of change in combined firm governance dummy on change in individual firm governance attributes. All variables are defined in Appendix B and Appendix C. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.*, ** and *** show statistical significance level at 10%, 5% and 1% respectively. We report T-statistics in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980).

Panel A: Summary statistics

	N	Mean	Median	S.D.	Min	Max
Δ Board independence	788	5.86	1.435	18.564	-100	100
Δ Audit Committee independence	837	1.248	.25	13.793	-69.46	72.32
Δ Stock compensation	837	1.858	-1.95	18.817	-65.64	99.78
Δ Policy for equal treatment of minority shareholders	837	.478	0	4.868	0	50

Panel B: Univariate analysis

	Positive change in combined firm governance indices		Negative or no change in combined firm governance indices		Two tailed t-test	
	N	Mean	N	Mean	Difference	p value
Δ Board independence	566	8.153	222	0.015	8.139	0.000
Δ Audit Committee independence	601	2.482	236	-1.895	4.378	0.000
Δ Stock compensation	635	3.270	202	-2.579	5.848	0.000
Δ Policy for equal treatment of minority shareholders	545	0.734	292	0.000	0.734	0.037

Panel C: Regression analysis

Dependent variables: Δ individual governance attributes	(1) Δ Board independence	(2) Δ Audit Committee Independence	(3) Δ Stock compensation	(4) Δ Policy for equal Treatment
Δ combined firm board structure index dummy	7.7220***			
	(6.636)			
Δ combined firm board function index dummy		3.8549***		
		(4.347)		
Δ combined firm compensation policy index dummy			6.5056***	
			(4.208)	
Δ combined firm shareholder rights index dummy				1.0115***
				(2.845)
Sales growth	-0.0097	0.1053	-0.0023	0.0004
	(-0.195)	(1.359)	(-0.048)	(0.025)
Δ Leverage	-15.9090	1.7699	-17.4008*	-0.2085
	(-1.557)	(0.288)	(-1.733)	(-0.072)
Δ size	1.2744	0.2484	-2.2135	-0.0846
	(0.832)	(0.282)	(-1.400)	(-0.244)
Δ Tobin's Q	2.6606	-4.2785	30.5660***	0.7194
	(0.339)	(-0.739)	(3.317)	(0.226)

Δ R&D	0.0000	-0.0000***	0.0000	-0.0000
	(0.519)	(-2.890)	(1.637)	(-0.699)

Table 14 (continued)

	(0.519)	(-2.890)	(1.637)	(-0.699)
Δ board size	2.1327***	1.4406***	1.1435***	0.9067***
	(4.418)	(3.533)	(3.096)	(3.351)
Year, industry, and country dummies	Yes	Yes	Yes	Yes
N	782	824	824	824
R^2	0.2446	0.2568	0.1311	0.2450

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 3.15: Post-acquisition operating performance

This table shows results from the ordinary least square (OLS) regressions of the effect of the bidder-target governance gap on post-acquisition change in operating performance of the combined firm for a sample of full takeovers between 2003 and 2015. We measure operating performance as the change in industry-adjusted operating income divided by total assets (ROA) from one year before (t-1) the deal announcement to one year after (t+1) the deal completion. Operating income is defined as sales less operating expenses (WC01250) in WorldScope. Both the acquirer and target are covered by the ASSET4ESG database before and after an M&A deal. The variable of interest ("Bidder-target governance gap") is the pre-deal firm-level corporate governance gap between the bidder and the target governance indices: board structure index, board function index, compensation policy index, and shareholder rights index. These indices are based on 55 firm governance attributes divided into four categories in the ASSET4 ESG database and have a percentage score from 0 (lowest) to 100 (highest). We use a dummy variable for the governance gap between the bidder and target that equals one when the governance gap is positive (bidder index - target index > 0) and zero otherwise in all our models. Definitions of all variables are described in Appendix B and Appendix C. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.*, ** and *** show statistical significance level at 10%, 5% and 1% respectively. We report T-statistics in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980).

Dependent variable: Δ bidder firm's ROA (t-1 to t+1)	(1) Board Structure	(2) Board Function	(3) Compensation Policy	(4) Shareholder Rights
Bidder-target gap dummy	0.0194**	0.0205**	0.0267***	0.0151*
	(2.270)	(2.465)	(3.119)	(1.682)
WGI gap	0.0002	0.0002	0.0002	0.0002
	(0.866)	(0.772)	(0.943)	(0.899)
Payment method dummy	0.0175***	0.0166**	0.0168***	0.0176***
	(2.702)	(2.547)	(2.602)	(2.710)
Cross-border dummy	-0.0013	-0.0017	-0.0028	-0.0020
	(-0.118)	(-0.162)	(-0.268)	(-0.191)
Same industry dummy	0.0041	0.0047	0.0037	0.0042
	(0.638)	(0.735)	(0.569)	(0.656)
Δ Cash to asset ratio	0.1464**	0.1469**	0.1456**	0.1462**
	(2.492)	(2.505)	(2.480)	(2.489)
Δ Leverage	-0.1952***	-0.1912***	-0.1957***	-0.1947***
	(-4.684)	(-4.604)	(-4.710)	(-4.693)
Δ Size	-0.0157*	-0.0153*	-0.0154*	-0.0160*
	(-1.747)	(-1.707)	(-1.744)	(-1.768)
Δ Tobin's Q	0.0485	0.0469	0.0491	0.0481
	(1.284)	(1.239)	(1.298)	(1.272)
Year, industry, and country dummies	Yes	Yes	Yes	Yes
N	692	692	691	688
R^2	0.2387	0.2401	0.2439	0.2367

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 3.16: Robustness tests

This table shows robustness results for the effect of the bidder-target governance gap on ex-post change in the combined firm's governance and operating performance relative to ex-ante weighted average governance and operating performance of combining firms. The sample consists of deals listed in SDC between 2003 and 2015. The ASSET4ESG database covers both the bidder and target before and after an M&A deal. We use a dummy variable for the governance gap between the bidder and target that equals one when the governance gap is positive and zero otherwise in all models. All variables are defined in Appendix B and Appendix C. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.*, ** and *** show statistical significance level at 10%, 5% and 1% respectively. We report T-statistics in parenthesis; Standard errors are corrected for heteroscedasticity (White, 1980).

Panel A: Alternative measures of governance

Dependent variables:	Δ combined firm's governance					Δ combined firm's operating performance				
	(1) Average index	(2) PCA Board Structure	(3) PCA Board Function	(4) PCA Compensation Policy	(5) PCA Shareholder Rights	(6) Average index	(7) PCA Board Structure	(8) PCA Board Function	(9) PCA Compensation Policy	(10) PCA Shareholder Rights
Bidder-target gap dummy	5.2978***	4.4179***	3.2672***	3.0268***	3.0367***	0.0201**	0.0110*	0.0134**	0.0121*	0.0093
	(4.722)	(5.736)	(4.160)	(3.798)	(4.160)	(2.474)	(1.746)	(2.417)	(1.801)	(1.532)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	837	837	837	837	837	725	725	725	725	725
R^2	0.2885	0.2822	0.2697	0.2678	0.2690	0.2209	0.2175	0.2194	0.2184	0.2169

Panel B: Majority takeover

Dependent variables:	Δ combined firm's governance				Δ combined firm's operating performance			
	(1) Board Structure	(2) Board Function	(3) Compensation Policy	(4) Shareholder Rights	(5) Board Structure	(6) Board Function	(7) Compensation Policy	(8) Shareholder Rights
Bidder-target gap dummy	3.7714**	3.1832*	6.0046***	5.5972***	0.0156**	0.0191***	0.0254***	0.0159**
	(2.461)	(1.769)	(3.086)	(4.243)	(2.180)	(2.663)	(3.476)	(2.098)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1105	1105	1105	1105	1032	1032	1030	1026
R^2	0.3952	0.3484	0.3550	0.5139	0.1881	0.1907	0.1949	0.1880

Panel C: Before and after financial crisis	Before 2009							
Dependent variables:	Δ combined firm's governance				Δ combined firm's operating performance			
	(1) Board Structure	(2) Board Function	(3) Compensation Policy	(4) Shareholder Rights	(5) Board Structure	(6) Board Function	(7) Compensation Policy	(8) Shareholder Rights
Bidder-target gap dummy	1.7193	3.4886	2.6399	3.3548	0.0210	0.0093	0.0193	0.0151
	(0.530)	(1.091)	(0.882)	(1.209)	(1.503)	(0.679)	(1.261)	(1.097)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	391	391	391	390	313	313	313	312
R^2	0.3106	0.3482	0.3695	0.4050	0.3930	0.3905	0.3923	0.3918
	After 2009							
Dependent variables	Δ combined firm's governance				Δ combined firm's operating performance			
	(1) Board Structure	(2) Board Function	(3) Compensation Policy	(4) Shareholder Rights	(5) Board Structure	(6) Board Function	(7) Compensation Policy	(8) Shareholder Rights
Bidder-target gap dummy	5.4030***	4.7845***	5.1987***	6.6143***	0.0234**	0.0273**	0.0283***	0.0153
	(4.672)	(4.162)	(3.935)	(5.562)	(2.074)	(2.522)	(2.625)	(1.376)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	446	446	445	443	412	412	411	409
R^2	0.3141	0.3191	0.2749	0.3919	0.2354	0.2395	0.2398	0.2298
Panel D: Excluding country with the maximum number of deals								
Dependent variables:	Δ combined firm's governance				Δ combined firm's operating performance			
	(1) Board Structure	(2) Board Function	(3) Compensation Policy	(4) Shareholder Rights	(5) Board Structure	(6) Board Function	(7) Compensation Policy	(8) Shareholder Rights
Bidder-target gap dummy	4.1578***	3.8316***	4.3341***	6.3010***	0.0289***	0.0337***	0.0251**	0.0278**
	(3.107)	(2.741)	(3.200)	(4.804)	(2.621)	(2.901)	(2.078)	(2.234)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry and country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	454	454	453	453	391	391	390	390
R^2	0.3510	0.3328	0.3801	0.4267	0.2544	0.2598	0.2501	0.2534

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Appendix C: Variable definitions of Chapter 3

Variable	Definition
Panel A: ex-post change in combined firm's governance indices and operating performance	
Δ Board Structure (BS)	Ex-post combined firm's BS index minus ex-ante weighted average BS index of combining firms. Source: ASSET4ESG.
Δ Board Function (BF)	Ex-post combined firm's BF index minus ex-ante weighted average BF index of combining firms. Source: ASSET4ESG.
Δ Compensation Policy (CP)	Ex-post combined firm's CP index minus ex-ante weighted average CP index of combining firms. Source: ASSET4ESG.
Δ Shareholder Rights (SR)	Ex-post combined firm's SR index minus ex-ante weighted average SR index of combining firms. Source: ASSET4ESG.
Δ Operating performance	Ex-post combined firm's industry-adjusted ROA minus ex-ante weighted average ROA of combining firms. Source: WorldScope
Panel B: Firm-level governance indices	
Board Structure index	Taken from ASSET4ESG, based on lagged average of 16 variables (definitions in appendix B).
Board function index	Taken from ASSET4ESG, based on lagged average of 15 variables (definitions in appendix B).
Compensation policy index	Taken from ASSET4ESG, based on lagged average of 13 variables (definitions in appendix B).
Shareholder rights index	Taken from ASSET4ESG, based on lagged average of 11 variables (definitions in appendix B).
Panel C: Bidder's country governance	
WGI index	It is the average index based on six country governance dimensions proposed by Kaufmann, Kraay, and Mastruzzi (2009). These dimensions include control of corruption, political stability, govt. Effectiveness, rule of law, voice and accountability and regulatory quality. Source: World Governance Indicators.
Panel D: deal characteristics	
Payment method	Dummy variable: 1 for purely cash-financed deal, 0 otherwise. Source: Securities Data Corporation.
Cross border deal	Dummy variable: 1 if cross border deal, 0 otherwise. Source: Securities Data Corporation.
Same industry deal	Dummy variable: 1 for same industry deal, 0 otherwise. Source: Securities Data Corporation.
Panel E: combined firm characteristics	
Δ Cash to asset ratio	Ex-post combined firm cash to asset ratio minus ex-ante weighted average cash to asset ratio of combining firms. Source: WorldScope
Δ Leverage	Ex-post combined firm leverage ratio (long term debt/total assets) minus ex-ante weighted average leverage of combining firms. Source:
Δ Size	WorldScope.
	Ex-post combined firm size (log of book value of total assets, WC02999) minus ex-ante weighted average size of combining firms.
Δ Tobin's Q	Source: WorldScope/DataStream.
	(Assets – book value of equity + market value of equity assets)/assets. Ex-post combined firm Tobin's q minus ex-ante weighted average Tobin's Q of combining firms Source: WorldScope/DataStream.

Internet Appendix of Chapter 3: New dataset of ASSET4 ESG

This table shows results from the ordinary least square (OLS) regressions of the effect of the bidder-target governance gap on the ex-post change in combined firm's governance and operating performance relative to ex-ante weighted average governance and operating performance of combining firms. The sample consists of full takeover deals listed in Securities Data Corporation (SDC) between 2003 and 2015. Both the bidder and target are covered by the ASSET4ESG database before and after an M&A deal. The dependent variables are the ex-post change in the combined firm's governance (Models 1 to 3) and operating performance (Models 4 to 6) relative to the ex-ante weighted average governance and operating performance of the bidder and target, respectively. The variable of interest ("Bidder-target governance gap") is the pre-deal firm-level corporate governance gap between the bidder and the target governance scores of the new pillars of governance, management, and shareholder rights. These pillars show a score from minimum (0) to highest (100). The governance (GOV.) score is the weighted average of management, shareholder, and CSR scores. For the management (MGT.) and shareholder rights (SHAREHOLDER) scores, ASSET4 ESG computes weighted averages of individual attributes (67 in the management pillar and 50 in shareholders rights pillar) under each pillar. We use a dummy variable for the governance gap between the bidder and target that equals one when the governance gap is positive (bidder index - target index > 0) and zero otherwise in all our models. All variables are defined in Appendix A and Appendix B. All regressions control for year, industry, and country fixed effects, whose coefficients are not shown for brevity.*, ** and *** show statistical significance level at 10%, 5% and 1% respectively. We report T-statistics in parenthesis; Standard errors are corrected for heteroscedasticity (White,1980).

Dependent variables:	Δ combined firm's governance			Δ combined firm's ROA		
	(1) GOV.	(2) MGT.	(3) SHARE-HOLDER	(4) GOV.	(5) MGT.	(6) SHARE-HOLDER
Bidder-target gap dummy	4.5929*	5.8518*	4.2014	0.0198*	0.0205**	0.0008
	(1.746)	(1.659)	(1.009)	(1.858)	(2.103)	(0.095)
WGI gap	0.0812	0.1033	0.0597	0.0004	0.0004	0.0004
	(1.151)	(0.974)	(0.648)	(1.429)	(1.406)	(1.470)
Payment method dummy	-3.0080*	-3.4930	-2.7390	0.0208***	0.0208***	0.0213***
	(-1.670)	(-1.425)	(-1.157)	(3.273)	(3.268)	(3.326)
Cross-border dummy	2.7576	4.7109*	-0.8363	-0.0008	-0.0010	-0.0015
	(1.361)	(1.693)	(-0.325)	(-0.079)	(-0.094)	(-0.140)
Same industry dummy	-0.6959	-0.6642	-1.3081	-0.0016	-0.0012	-0.0013
	(-0.434)	(-0.305)	(-0.623)	(-0.244)	(-0.193)	(-0.204)
Δ Cash to asset ratio	19.2537**	25.1723*	9.6309	0.1425**	0.1427**	0.1448***
	(2.025)	(1.881)	(0.773)	(2.554)	(2.557)	(2.585)
Δ Leverage	12.2545	24.0624*	-13.7598	-0.1657***	-0.1634***	-0.1742***
	(1.289)	(1.851)	(-1.141)	(-3.408)	(-3.354)	(-3.549)
Δ Size	2.8274**	2.6387	5.4885***	-0.0048	-0.0048	-0.0058
	(2.424)	(1.642)	(3.573)	(-0.735)	(-0.736)	(-0.873)
Δ Tobin's Q	5.8287	2.4991	18.5874**	0.0354	0.0339	0.0407
	(0.825)	(0.263)	(1.991)	(1.021)	(0.979)	(1.159)
Year, industry, and country dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	816	818	818	725	725	725
R^2	0.1669	0.1591	0.1429	0.1845	0.1855	0.1796

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

4 Industry takeover competition and announcement returns: International evidence

4.1 Introduction

A growing body of literature highlights the competitiveness of the international takeover market and suggests that announcement returns are asymmetrically distributed between the bidder and target when takeover competition is higher (Alexandridis, Petmezas, and Travlos, 2010; Humphery-Jenner and Powell, 2011; Rossi and Volpin, 2004; Servaes, 1991; Shams, 2021; Shams, Gunasekarage, and Colombage, 2013). Leveraging on these studies, a commonly held view is that bidders offer hefty premiums to targets for winning the bidding contest in the presence of intense takeover competition. Additionally, some authors argue that a competitive takeover market should encourage efficient allocation of management teams across firms (Aktas, Bodt, and Roll, 2010; Jensen, 1986; Jensen and Ruback, 1983), and poor-performing bidders can become potential targets (Mitchell and Lehn, 1990). While prior studies examine the impact of competition on announcement returns in the takeover market, to our knowledge, no prior study investigates the effect of target's industry competition on takeover value and returns to bidders and targets. Accordingly, we examine two countervailing effects of the industry takeover competition whether the bidder managers are insulated from disciplinary pressure and enhance takeover value or tend to overpay for winning the bid.

Despite the significant differences in the takeover markets (Alexandridis, Petmezas, and Travlos, 2010; Rossi and Volpin, 2004; Shams, 2021), the industries can also differ in the degree of competition.[29] Shleifer and Vishney (1997) suggest that industry competition is an important governance mechanism for eliminating managerial inefficiency because the margin of error in competitive industries is narrow. Any misstep can be penalized by competitors, seriously putting the firm survival at risk. Therefore, competition puts pressure on managers, and the best bid will win. To make sure that the winning bid is the best one, the governance quality of the bidder's home country should be higher; otherwise, the bidders may overbid to win the deal. Considering the disciplinary pressure of takeover competition, one could expect positive association between takeover competition and combined returns of the bidder and target. However, if the overpayment argument holds, the competition can negatively (positively) affect bidder (target) returns.

[29] The literature on product market competition contends that industries are heterogeneous in the degree of competitiveness (Giroud and Mueller, 2010, 2011; Jiang, Kim, Nofsinger, and Zhu, 2015; Stoughton, Wong, and Yi, 2017). The product market competition may resemble takeover competition in some expected outcomes like offering a fairer premium and engaging in value-enhancing deals.

This chapter examines an essential aspect of the takeover competition – the target's industry competition and provides evidence of how it affects value-creation through M&As. The bidder managers look for targets having growth potential (Shams and Gunasekarage, 2019) and engage in M&As to increase the combined firm value post-acquisition (Bradley, Desai, and Kim, 1988; Servaes, 1991). We propose that in a dynamic market for corporate control where the auction process is competitive and mangers are more disciplined, the poor deals may be screened out, and only the deals with value-enhancing potential may succeed, most probably at the expense of overpayment by the bidder. Therefore, the potential of value-creation in a competitive takeover market can be higher. In the spirit of the study of Alexandridis, Petmezas, and Travlos (2010), we examine whether, *ceteris paribus*, the target's industry competition is related to combined, bidder, and target cumulative abnormal returns (CARs) around the deal announcement.

We measure industry competition as the ratio of the number of acquired targets to total public firms within the same industry, year, and country. Our sample covers 1072 completed mergers and acquisitions from 2003 to 2016, where the acquirer buys the majority shares (greater than 50%) of the target. We find that industry competition does not affect the combined CARs of bidders and targets, while the effect on bidder (target) CARs is negative (positive). As far as the magnitude is concerned, on average, when competition is one standard deviation higher, bidder returns are 0.64 percentage points (pp) lower while target returns are 3.31 pp higher. The results exist after controlling for country-level competition, bidder and target firm characteristics, deal characteristics, and macro-economic variables. The results persist after controlling for country-level competition, bidder and target firm characteristics, deal characteristics, and macro-economic variables. Our results suggest that industry takeover competition significantly impacts the partition of gains, where bidders lose, and targets gain, but the combined value is close to zero. Our findings on the combined returns do not hold up the disciplinary view of takeover competition, but the results on acquirer and target returns support the overpayment argument and are consistent with the existing work on takeover competition (see, Alexandridis, Petmezas, and Travlos, 2010; Rossi and Volpin, 2004; Shams, 2021).

We next examine whether the negative relation between higher industry competition and bidder CARs is derived from the higher premium paid as the empirical evidence reveals that bidders pay a higher premium for winning the other raiders' bids (see among others, Humphery-Jenner and Powell, 2011; Shams, Gunasekarage, and Colombage, 2013). Taking these studies into consideration, we expect that takeover premium is higher when industry competition is stronger. We find that the takeover premium is higher from 1.95 to 3.05 pp, on average, when industry competition is one

standard deviation higher. The results corroborate that the underlying reason for the negative association between the bidder returns and target industry competition is the overpayment. In our robustness tests, we further find that overpayment stems from the empire-building behavior of bidder managers.

Finally, we test whether the institutional quality of the bidder's country mitigates the negative returns to bidders associated with higher industry competition. The literature shows that bidders come from countries with higher shareholder rights and accounting standards (Rossi and Volpin, 2004), and their returns are higher when the difference in home country governance of the bidder and target is higher (Ellis, Moeller, Schlingemann, and Stulz, 2013; Starks and Wei, 2013). To measure the bidder country's institutional quality, we use World Governance Indicators issued by the World Bank (see Kaufmann, Kraay, and Mastruzzi, 2009). We find that the reported negative impact of industry competition on bidder CARs mitigates when bidders come from countries with higher institutional quality, suggesting a limit above which the acquirer must withdraw from the deal. The findings are consistent with existing literature on country governance (Ellis, Moeller, Schlingemann, and Stulz, 2017; Klapper and Love, 2004; Martynova and Renneboog, 2008) and support the views that countries with higher institutional quality face lower agency costs and bidders from these countries make good acquisitions.

Our work makes three significant contributions to the M&A literature. Despite the extensive work on the takeover competition, we know little how takeover competition in the target industry affects the announcement returns. First, we replenish the existing gap and add knowledge to the studies on takeover competition (Bradley, Desai, and Kim, 1988; Humphery-Jenner and Powell, 2011; Morck, Shleifer, and Vishny, 1990; Shams, Gunasekarage, and Colombage, 2013). We reveal that the industries also vary in competitiveness for the takeover market. More importantly, our results extend the work of Alexandridis, Petmezas, and Travlos (2010) and show that the industry-level competition also has an essential effect on the cumulative abnormal returns beyond the country-level takeover competition. Second, we expand the understanding of competitive bids' outcomes (Aktas, Bodt, and Roll, 2010) and asymmetric distribution of returns between merging firms in the takeover market. Third, we extend the work on country-level governance in determining the bidder announcement returns (Ellis et al., 2013; Starks and Wei, 2013). Specifically, we show that the higher institutional quality of the bidder country mitigates the negative returns to bidders associated with higher industry competition.

The remainder of the work is arranged as follows: in Section 4.2, we discuss the literature and develop the hypothesis; in Section 4.3, we describe the data and shows summary statistics; in Section 4.4, we discuss the methodology; in Section 4.5, we present our results; in Section 4.6, we presents robustness tests; in Section 4.7, we conclude the chapter.

4.2 Literature review and hypothesis development

The existing literature shows that M&As intend to create synergies (Bradley, Desai, and Kim, 1988; Servaes, 1991), although returns are asymmetrically distributed between shareholders of acquirers and targets. The bidder managers look for targets with growth potential (Shams and Gunasekarage, 2019) and engage in M&As to increase the combined firm value post-acquisition (Healy, Palepu, and Ruback, 1992; Servaes, 1991).

The theory of market for corporate control creates a strong sense of disciplinary pressure on bidder managers in competitive markets. The main reasons include competition among executive teams for managing firm resources (Aktas, Bodt, and Roll, 2010; Jensen, 1986; Jensen and Ruback, 1983) and threat of takeovers for poor-performing firms (Mitchell and Lehn, 1990). Manne (1965) contends that the rudimentary assumption underlying the takeover market is the association between managerial efficiency and the firm's stock price. Takeovers are one of the external governance mechanisms that discipline managers of public firms. The bidder managers have to be very cautious for acquiring the targets in competitive industries as they can become the potential target in case of a prior value-destroying takeover (Shleifer and Vishney, 1997). When asymmetries are severe, a strong corporate control market reins managerial opportunism and aligns the shareholder-manager incentives (Jensen and Ruback, 1983). Consequently, the bidder managers should engage in positive net present value (NPV) projects appreciated by the stock markets. The empirical evidence supports this argument and shows that the combined firm value increases post-acquisition. For example, Healy, Palepu, and Ruback (1992) examine the combined firm's ex-post operating performance and find that combined firms improved operating cash flows and stock returns.

In the presence of disciplinary pressure and takeover threat, bidders are incentivized to make deals that increase synergy captured by the combined returns of the bidder and target. Additionally, in a dynamic takeover market where the auction process is competitive (Liu and Mulherin, 2018), the bad deals may be screened out, and only the deals with value-enhancing potential may succeed, most probably at the expense of overpayment by the bidder. Therefore, if disciplinary pressure of the takeover market holds, we expect that bidder managers can pursue value-enhancing deals, better

estimate the synergies and pay a fairer premium in a competitive takeover environment. Based on the discussion, we develop our first hypothesis as follows:

H1: Higher target industry competition in the takeover market is positively associated with combined CARs of the bidder and target.

Acquiring public targets create losses to bidder firms (Moeller, Schlingemann, and Stulz, 2004) more often than they obtain gains (Alexandridis, Antypas, and Travlos, 2017). The effect of takeover competition on the announcement returns to bidder and target shareholders has been previously studied. The higher takeover competition generates positive (negative) returns to targets (bidders) mainly because bidders overpay for the targets (Bradley, Desai, and Kim, 1988; Humphery-Jenner and Powell, 2011; Servaes, 1991). More recently, this evidence has been found across many takeover markets, such as the U.K. (Rossi and Volpin, 2004); the U.S. (Alexandridis, Petmezas, and Travlos, 2010); and Australia (Shams, 2021). These authors accentuate the idea that some takeover markets are more competitive than others. For instance, Alexandridis, Petmezas, and Travlos (2010) hypothesize whether bidders create value for their shareholders when acquiring targets beyond the competitive takeover markets. They find a negative association between bidder returns and highly competitive takeover markets such as the U.S., the U.K., and Canada. Bidders earn higher returns in the rest of the world due to lower levels of takeover competition. Their main argument is that bidders pay a lower premium for targets from less competitive markets and vice versa. Although the cross-country differences in takeover markets explain the bidder and target returns, there are also industry-level disparities in the competitiveness of takeover markets that can affect the returns to combining firms.

A growing body of literature shows that the winner's curse hypothesis detain in the takeover market (Baker, Ruback, and Wurgler, 2007; Thaler, 1998) and can be traced to the hubris hypothesis[30] of Roll (1986), where managers with an illusion of growth fall prey to the winner's curse and pay higher for acquiring targets. Boone and Mulherin (2008) show that the winning bidders experience zero NPV due to potential or actual takeover competition. Building on the asymmetric distribution of returns between bidders and targets and higher takeover premiums paid by bidders in the existence of higher takeover competition, we develop our second hypothesis as follows:

H2: Higher target industry competition in the takeover market is associated with higher (lower) target (bidder) announcement returns, ceteris paribus.

[30] Billett and Qian (2008) show that the higher takeover competition can increase manager's hubris-related effects. Malmendier and Tate (2008) argue that overconfident managers conduct poor M&A deals.

The law and finance theory elaborates that each country belongs to a particular legal origin, and countries differ in the governance quality (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998). The cross-country differences in governance standards influence stockholder returns, market valuations, and external financing costs (Beck, Demirgüç-Kunt, and Levine, 2003; Berkowitz, Pistor, and Richard, 2003; Cremers and Nair, 2005). Rossi and Volpin (2004) find that bidders compared to targets come from countries with better shareholder protection and accounting standards. Starks and Wei (2013) and Bris and Cabolis (2008) document that bidder returns are a function of the home country's governance and propose that bidder shareholders earn higher returns and pay fairer premiums when their home country governance is better. Apart from the portability effect of country governance from bidders to targets in M&As, Ellis et al. (2017) and Martynova and Renneboog (2008) show that bidders from better governance regimes earn higher returns. The existing literature reveals the supportive role of country-level governance proxied by shareholder rights and institutional quality, suggesting that the bidders from better-governed countries earn higher returns and make better deals.

The most plausible explanation for the higher returns to bidders from the better-governed countries is that the agency conflicts are lower in these countries (see, among others, Young et al., 2008). Better country governance may assist the bidders to manage better agency conflicts between shareholders and managers, less likely to engage in poor M&A deals, and the payoffs are higher for bidders from these nations (Ellis et al., 2017). Another explanation is that the financial development is lower in poor governed countries and access to finance is expensive (La Porta et al., 1998). It means that firms from countries with lower national governance standards do not have sufficient investment opportunities and are financially constrained compared to firms from better-governed countries. Considering both explanations, bidders from counties with higher governance standards may better manage agency conflicts, have better contracting mechanisms, and cheaper finance resources. It follows that institutional quality differs among countries; those from countries with higher institutional quality should mitigate the negative effect of industry competition on the bidder returns. Based on these arguments, we develop our third hypothesis as follows:

H3: the lower bidder announcement returns associated with higher industry competition are mitigated when firms are from countries with better institutional quality.

4.3 Data and summary statistics

The initial sample comes from Thomson Financial's Securities Data Corporation (SDC) and covers fourteen years from 2003 to 2016. We take completed M&A deals where bidders and targets are public listed firms with stock price data available from the Thomson Reuter's DataStream. We take majority stake acquisitions in which bidders own less than 50% target stocks pre-acquisition and hold more than 50% post-acquisition.[31] We eliminate deals that SDC categorizes as repurchases, self-tenders, spinoffs, minority stake purchases, privatizations, and recapitalizations. To avoid potential noise in our analysis, we exclude countries with less than five deals during the sample period. Finally, we identify 1072 M&A deals that fulfill our criteria.

Table 4.1 shows the sample distribution by the target's industry including, the number of targets, average competition, and average CARs to combined firms over the fourteen years. Almost 11.5% targets are in the electronic equipment industry[32], 7% in chemicals, and 6% in the mines industry. We calculate industry competition as the ratio of the number of acquired targets to total public firms within the same industry, year, and country. We observe that drugs, soda, and cloths apparel are the top three competitive industries, followed by medical equipment, transportation, and beer. The bidder and target CARs are the five-day cumulative abnormal returns around the announcement day, and the combined CARs are the weighted average of the bidder and target returns. The average combined CARs are positive in the most competitive industries and negative in the least competitive industries, indicating that the takeover value increases with higher industry competition in the takeover market.

Table 4.2 provides summary statistics of each variable we use in this study. The combined, bidder, and target five-day cumulative abnormal returns are -4%, 0.7%, and 8%, respectively, as reported by Panel A of Table 2. Panel B reports that the average industry competition is 5.5% with a minimum of 0.3% and a maximum of 75% and has a significant standard deviation. The acquirer's average country-level competition is 6% ranging from 0.2% to 90% at the mean. Panel C shows deal-specific characteristics: dummy variables for payment method, same-industry deal, and cross-border deal. Mostly, bidders pay in stock (54%), engage in same-industry deals (59%), and domestic acquisitions (77%). The acquirer and target characteristics include leverage, long-term debt scaled by assets; Tobin's q, assets minus book value of equity plus the market value of equity scaled by assets; size, the logarithm of assets; all of them are computed a year before the announcement day. The mean

[31] The results are also valid for 100% ownership acquisitions.
[32] Although computer software industry dominates our sample, the results for competition still hold when we drop deals from this industry.

values of the bidder's leverage, Tobin's q, and size are 0.20, 0.49, and 14.54**,** respectively, shown in Panel D. The target's average leverage, Tobin's q, and size are 0.20, 0.48, and 12.02, respectively. The run-up in stock price is the sum of abnormal returns for a window of 90 days up to 20 days before the deal announcement. The average bidder and target stock price run-up is -0.7% and 1.9%, respectively. We use weighted average stock price run-up of the bidder and target for combined returns regressions; the mean value of combined stock price run-up is -0.5%. Panel E of Table 2 shows country characteristics, GDP growth, and GDP per capita with the mean value of 2.31and 10.41, respectively. All of these variables are defined in the Appendix D.

In Table 4.3, we present the Pearson correlation matrix. We find that the bidder returns are negatively correlated with industry competition while the target returns and takeover premium are positively correlated. The correlation coefficients are statistically significant. The correlation between the combined CARs and industry competition is positive, albeit insignificant. We also observe a positive and statistically significant correlation between country competition and target returns or premium. the same correlation between with the bidder, combined, and target returns.

4.4 Methodology

4.4.1 Cumulative abnormal returns

If the acquisition of a public target is unanticipated, the takeover value should be reflected in the announcement returns. As per our hypotheses, we expect that the industry competition should positively affect the combined and target cumulative abnormal returns and negatively affect the bidder cumulative abnormal returns. We use the following market model to estimate expected returns:

$$R_{act} = \alpha_{ac} + \beta_{ac} R_{ct} + \varepsilon_{act}, \; t=-255,\ldots,-25 \qquad (1)$$

where R_{act} is the DataStream daily return for the bidder or target in country *c*; R_{ct} is the daily market index return for country *c*; ε_{act} is the excess return. To calculate cumulative abnormal returns for five days period (t-2, t+2) around the announcement date, we use Fama, Fisher, Jensen, and Roll, (1969) standard event study methodology. The cumulative abnormal returns are the disparity between actual and expected daily returns. The following model is used to test the industry competition effect on the cumulative abnormal returns:

$$CAR\ (-2,+2)_{m,t} = \alpha + \beta_1 IC_{m,i,t-1} + \sum \beta_x Country\ controls_{a,t-1} + \sum \beta_y\ Deal\ \ controls_{m,t} + \sum \beta_z Firm\ controls_{a,t-1} + \lambda_{\ t} + \eta_{\ i} + \gamma_{\ c} + \varepsilon_{i,t} \qquad (2)$$

where $CAR\ (-2,+2)_{m,t}$ is the acquirer's or target's cumulative abnormal return around the five-day event window for deal *m* at time *t*; α is the intercept; $IC_{m,i,t-1}$ is the target's industry competition for deal *m*, the industry *i* and one year before the deal announcement. Fama-French 48 industry categories are used for industry classification. $Country\ controls_{a,t-1}$ is a vector of country-specific characteristics for the bidder *a* one year prior to the deal, and it includes: country competition, Gross Domestic Product (GDP) growth, log GDP per capita; $Deal\ \ controls_{m,t}$ is a vector of deal-specific characteristics for deal *m* at time *t;* $Firm\ controls_{a,t-1}$ is a vector of firm-specific characteristics for bidder *a* and one year before the deal announcement. The deal specific-controls[33] include: number of bidders; method of payment, a binary variable with value of one if the payment is made with cash and zero otherwise; cross-border deal, an indicator variable that equals one for cross-border deals and zero for domestic deals; same industry deal, a binary variable that is equal to one if the merging firms belong to the same Fama-French 48 industry and zero otherwise; relative deal size, deal-value divided by the bidder's market value of equity. The firm specific-controls include leverage, Tobin's q, size, and stock price run-up. To control omitted factors that can influence the CARs, we add dummies for year, λ_t, industry, η_i, and country, γ_c. Finally, we mitigate the effect of outliers by winsorizing one percent (distribution extremes) CARs and firm-specific controls.

For examining the industry competition effect on the target returns, we use the same model by replacing bidder CARs with target CARs and bidder characteristics with target characteristics. Following Bradley, Desai, and Kim (1988), we compute the combined returns of acquirer and target by constructing the value-weighted portfolio of merging firms. The weights are assigned on the basis of equity's market value six days before the deal announcement, and target weighted returns are adjusted for the toehold.

4.4.2 Target's industry competition

Following Alexandridis, Petmezas, and Travlos (2010), we calculate industry competition as the percentage of acquired targets to total publicly traded firms in the same industry, year, and country. They use this measure for the country-level competition in the takeover market, and we employ it at the industry level. More specifically, we calculate competition within a target industry in each year and country. We use Fama-French 48 industry categories, excluding financials and

[33] To review important determinants of M&As and their effect on takeover value, see, Martynova and Renneboog (2008) and Jensen and Ruback (1983).

utilities. Based on this measure, the competitive industries have a higher percentage of acquired firms. For robustness of the results, we use different thresholds for competitive industries (i.e., median, terciles, and quintiles) to examine if the pattern of announcement returns differs between competitive and non-competitive industries.

4.4.3 Control variables

We control for three categories of variables linked with cumulative abnormal returns: country characteristics, deal characteristics, and bidder/target firm characteristics.

The country characteristics that we use as controls include GDP per capita, GDP growth, and country-level competition, all of them are calculated one year prior to the deal. The literature on country-level competition (Alexandridis, Petmezas, and Travlos, 2010; Rossi and Volpin, 2004; Shams, 2021) finds that bidders earn negative returns in competitive takeover markets and vice versa. The targets, on the other hand, earn positive returns in competitive takeover markets. We follow Fauver, Loureiro, and Taboada (2017) and control for financial development and economic growth using two macro-economic variables - log of GDP per capita and GDP growth.

We consider some deal-related characteristics like cross-border deal, method of payment, the same-industry deal, and relative deal size. The cross-border M&As allow firms to get additional rents because of different tax systems (Col, 2017; Servaes and Zenner, 1994), governance standards (Martynova and Renneboog, 2008; Ellis et al., 2017), and stock markets (Erel, Liao, and Weisbach, 2012). In practice, several frictions impede cross-border M&As resulting in significant losses to bidder shareholders (see, Moeller, Schlingemann, and Stulz, 2004). The bidder's payment in cash positively affects announcement returns (Graham, Lemmon, and Wolf, 2002) because of the adverse selection problem (Myers and Majluf, 1984). The same-industry deal can create higher returns due to economies of scale (Masulis, Wang, and Xie, 2007). We classify the same-industry deal if the merging firms share the same Fama-French industry. The relative deal size positively affects returns (Moeller, Schlingemann, and Stulz, 2004); therefore, we also control relative deal size.

We control bidder and target characteristics, including leverage, size, and Tobin's q; all are computed one year prior to the deal announcement. According to the existing studies, the impact of Tobin's q on announcement returns is ambiguous. For instance, Lang, Stulz, and Walkling (1989) show that combined returns of the bidder and target increases (decreases) with the bidder (target) Tobin's q while Wang and Xie (2009) do not report any impact of Tobin's q of the merging firms on returns to the combined firm. Considering the univariate analysis of Moeller, Schlingemann, and Stulz (2004), we propose that larger acquirers conduct bad deals resulting in lower combined returns.

Leverage limits managerial discretion as the higher debt decreases future cash flows (Lang, Stulz, and Walkling, 1991) and incentivizes managers to increase firm performance to keep their jobs alive (S. C. Gilson, 1990). Finally, we control run-up in the stock price of the bidder and target for the period (-90, -20).

4.5 Target's industry competition and announcement returns

4.5.1 Univariate analysis

Table 4.4 shows the results of the univariate analysis that examine how the difference in industry competition affects announcement returns to the combined, bidder, and target firms. We divide our sample into two categories of higher and lower competition and create a binary variable equal to 1 for industries above the competition's median value and 0 otherwise. Considering *H1*, we expect that the combined CARs of the merging firms should be higher when the competition is higher, while under *H2*, the bidder (target) returns must be lower (higher) for competitive industries.

To estimate the difference in means, we use a two-tailed t-test that examines the mean difference between higher and lower industry competition. There are 541 (50%) M&A deals in the sample with higher competition and 531 (50%) deals with lower competition, showing an evenly distributed sample. We observe that the mean combined returns for the lower competition group are -7.5% (-0.075 $\times$ 100) and -0.5% for the higher competition group. The difference in means is -7% that is statistically insignificant. It means that competition neither makes companies engage in better deals nor worse deals. We next find that the average disparity in the bidder CARs between lower and higher competition is 1.1%, significant at the 1% level. The target CARs and takeover premiums show the average difference of -6.3% and -6.1%, respectively, between lower and higher competition groups.

In brief, the univariate analysis shows that the industry competition in the takeover market is neither harmful nor beneficial for value-creation. Bidders acquiring public targets lose value due to a higher premium for winning the bid, and the targets get an advantage of that. We proceed to examine the reported relationship in a multivariate framework.

4.5.2 Industry competition and cumulative abnormal returns

The results of the univariate analysis show that the reported average difference in CARs between the lower and higher competitive industries are positive for combined CARs and bidder CARS while negative for target CARs and takeover premium. However, it is inconclusive whether the disparity among returns observed in the univariate analysis is because of industry competition. If

target industry competition impacts synergies positively in the takeover market, then combined CARs must be higher. The bidder (target) CARs should be lower (higher) if the bidders pay higher premiums to win the bid, particularly when the bidder is from a country with lower institutional quality. So, we proceed with multivariate tests to check the effect of the target's industry competition on announcement returns after controlling other competition measures, deal characteristics, firm characteristics, and country characteristics.

4.5.2.1 Combined cumulative abnormal returns of the bidder and target

According to the theory of the market for corporate control, the takeover competition creates disciplinary pressure on bidder managers (see, for instance, Jensen and Ruback, 1983; Shams and Gunasekarage, 2019) where managerial teams compete for control of corporate resources (Aktas, Bodt, and Roll, 2010; Jensen, 1986; Jensen and Ruback, 1983) and poor performing bidders can be potential targets (Mitchell and Lehn, 1990). Considering the disciplinary pressure of competition, we postulate that the industry competition must create takeover value and show a positive association with combined CARs of bidders and targets. To test our first hypothesis (*H1*), we estimate Eq. (2) shown above by replacing the dependent variable as a value-weighted portfolio of bidder and target CARs.

In Model (1) of Table 4.5, we add all explanatory variables and test the effect of target industry competition on combined CARs. The estimated coefficient on our key variable of interest - industry competition shows a positive, albeit insignificant, effect on the combined returns. It shows that *H1* is not supported, and industry competition does not explain combined CARs. More strikingly, none of the controls show significance at any level. Therefore, we cannot argue that in a dynamic corporate control market, the industry competition creates pressure and only value-enhancing deals can be executed.

4.5.2.2 Bidder and Target cumulative abnormal returns

In Models (2) and (3) of Table 4.5, we show the regression analysis results of the effect of target industry competition on the bidder and target CARs. The parameter estimates show that the industry competition has a significantly negative (positive) effect on the bidder (target) CARs at the 1% level, demonstrating that with the increase in industry competition, the target returns increase while the bidder returns decrease. Economically, a one standard deviation increase in the industry

competition reduces bidder CARs by 0.64 pp[34] and increases target CARs by 3.31 pp. The results support *H2* that the higher takeover competition in the target industry competition is linked with lower (higher) bidder (target) announcement returns. These results suggest that the merging firms do not share the valuation effects of higher industry competition. It further implies that the industry takeover competition significantly impacts the partition of gains, where bidders lose, and the targets gain, but the combined value is close to zero.

Based on the findings, we argue that target industries vary in the competitiveness for takeover markets, and most of the benefits emerging from industry competition accrue to target stockholders. They enjoy higher returns because each bidder wants to win the bid. Our findings on the bidder and target CARs are consistent with the earlier studies on competitive takeover markets (see, Alexandridis, Petmezas, and Travlos, 2010; Rossi and Volpin, 2004; Shams, 2021) and competing bidders (Bradley, Desai, and Kim, 1988; Humphery-Jenner and Powell, 2011; Morck, Shleifer, and Vishny, 1990; Shams, Gunasekarage, and Colombage, 2013). Our findings differ from those of Masulis, Wang, and Xie (2007), who find that bidders from competitive industries conduct better deals due to the disciplinary pressure of competition in the product market. They suggest that product market competition acts as a governance mechanism that hampers bidder managers from misusing firm resources. Although our focus is on industry competition in the takeover market instead of the product market, both markets can resemble in expected outcomes. Our results show that bidder returns are lower in competitive takeover industries as bidders aggressively pay for winning the bid.

We employ several controls in all Models of Table 4.5 that have been suggested in the literature. We control for country-level competition using two measures: percentage of acquired listed targets proposed by Alexandridis, Petmezas, and Travlos (2010) and the number of publicly announced bidders (see Moeller, Schlingmann, and Stulz, 2004). The coefficients on both county-level competition measures are positive, albeit insignificant, except the coefficient on country competition in Model (3). Moeller, Schlingmann, and Stulz (2004) document that small bidders outperform their bigger counterparts in the U.S. sample and argue that firm size is an important determinant of gains in M&As. The estimated coefficient on the bidder size is negative and statistically significant at the 1% level, reflecting that larger bidders generate lower returns on average. In the target return regression, Model (3) of Table 4.5, we find that the estimated parameter of target size is negative and significant. The payment method dummy shows a positive association

[34] In Model (2) of Table 5, the coefficient on industry competition is -0.0648 (t-statistic of -2.860) with 0.099 standard deviation. So, an increase of one standard deviation in target industry competition decreases bidder CARs by 0.64 percentage points (Standard deviation × β coefficient × 100 = 0.099 × 0.0648 × 100 = -0.64).

with the bidder and target CARs, supporting the view that cash-financed deals are value-enhancing (Shleifer and Vishny 2002; Graham, Lemmon, and Wolf, 2002). The coefficients on other controls are similar in magnitude and statistical significance across Models (2) and (3).

Overall, we show that the higher industry competition does not affect the takeover value captured by the combined CARs, but it significantly affects the split of returns between bidders and targets. The results exist after controlling year, industry, and country fixed effects, using different thresholds for competitive industries and testing alternative window of CARs. More importantly, the results extend the work of Alexandridis, Petmezas, and Travlos (2010) and show that the target industry competition also affects the announcement returns beyond the country-level competition in the takeover market.

4.5.2.3 Takeover premium

The higher takeover premium (Alexandridis, Petmezas, and Travlos, 2010; Humphery-Jenner and Powell, 2011; Morck, Shleifer, and Vishny, 1990; Rossi and Volpin, 2004; Shams, 2021; Shams, Gunasekarage, and Colombage, 2013) is the most common explanation for the asymmetric distribution of returns between bidders and targets. The bidders overpay to win the bid and lose value post-acquisition. If the overpayment argument holds, we expect that the target industry competition should positively affect takeover premium. The acquisition premium is the ratio of the offer price to the target stock price prior to the deal. We employ two alternative premium measures (i.e., four weeks and two weeks before the announcement day) provided by SDC in Model (1) and (2) of Table 4.6. We estimate the industry competition effect on the takeover premium using the following:

$$PREMIUM_{m,w-4\ or\ 2} = \alpha + \beta_1 IC_{m,i,t-1} + \sum \beta_x Country\ controls_{a,t-1} + \sum \beta_y\ Deal\ \ controls_{m,t} + + \sum \beta_z Target\ controls_{a,t-1} + \lambda_{\ t} + \eta_{\ i} + \gamma_{\ c} + \varepsilon_{i,t} \quad (3)$$

where $PREMIUM_{m,w-4\ or\ 2}$ is the four or two weeks takeover premium before the announcement of deal *m*, the independent variables are the same as in the target CARs regression (Model (2) of Table 4.5). $Target\ controls_{a,t-1}$ is a vector of target firm characteristics, including Tobin's q, leverage, and size. The key variable of interest $IC_{m,i,t-1}$ is the target's industry competition for deal *m*, the industry *i*, and one year prior to the announcement day. The coefficients on industry competition in both models are significantly positive. For instance, in Model (1) of Table 4.6 (Panel A), one standard deviation increase in the target industry competition improves the premium by 3.05 pp, on average. The results in this section corroborate that the underlying reason for significant

negative returns to bidder shareholders in acquiring public targets is an overpayment. The results also support a stylized fact in M&As that acquirers earn negative or insignificant abnormal returns (Andrade, Mitchell, and Stafford, 2001; Renneboog and Vansteenkiste, 2019).

So far, we find that the industry competition has a positive association with target returns and takeover premium while negatively affects bidder returns. These findings suggest that targets gain and bidders lose in competitive industries, but the overall takeover value is close to zero. We next uncover whether the empire-building behavior of bidder managers can also explain the higher premium paid by bidders to targets. Following Giroud and Mueller (2010), we use three proxies for bidder's empire-building: asset growth, property, plant, and equipment (PPE) growth, and capital expenditures scaled by total assets. The vast literature (see, among others, Billett and Qian, 2008; Jensen, 2005) on the overpayment argument support the hubris hypothesis presented by Roll (1986). Consistent with these studies, our results in panel B of Table 4.6 suggest that bidders might overpay due to empire-building behavior or the illusion of growth. We further proceed if the reported negative effect of industry competition on bidder returns mitigates if the bidder firm belongs to a country with better institutional quality.

4.5.3 Bidder's institutional quality and returns

This section shows whether the institutional quality of the bidder's home country mitigates the negative association between industry competition and bidder announcement returns. An important strand of literature documents the impact of country-level governance on the bidder announcement returns and takeover premium (Bris and Cabolis, 2008; Ellis et al., 2017; Starks and Wei, 2013). Firms from better-governed countries can create gains for their shareholders due to lower agency costs and higher efficiency (Ellis et al., 2017). Thus, we expect that bidders from countries with better institutional quality can earn higher returns and mitigate the negative effect of target industry competition on bidder returns. Under *H3*, we estimate the following model:

$$BIDDER\ CAR\ (-2,+2)_{m,t} = \alpha + \beta_1 IC_{m,i,t-1} + \beta_2 high\ institutional\ quality_{a,t-1} + \beta_3 IC_{m,i,t-1} \times high\ institutional\ quality_{a,t-1} + \beta_x Country\ controls_{a,t-1} + \sum \beta_y\ Deal\ controls_{m,t} + \sum \beta_z Bidder\ controls_{a,t-1} + \lambda_t + \eta_i + \gamma_c + \varepsilon_{i,t} \quad (4)$$

To measure the bidder country's institutional quality, we use the World Bank's Governance Indicators (see Kaufmann, Kraay, and Mastruzzi, 2009). The indicators vary over time and have a score from 0 (minimum) to 100 (maximum). The indicators reflect scores on six dimensions of the

institutional quality of a country: anticorruption, regulatory quality, government effectiveness, political stability, citizen's freedom to elect a government, and the rule of law. First, we use one dimension of the institutional quality at a time, and second, we compute the mean index (WGI index) based on these six dimensions for each country. To identify the better institutional quality of the bidder's home country, we create a binary variable that is equal to one if the governance score is more than the world median and zero otherwise.

Table 4.7 estimates cross-sectional regressions of acquirer CARs on the interaction term between industry competition and bidder country's institutional quality. All controls are the same as in the target CAR regression (Model (2) of Table 4.5) except the institutional quality of the bidder's home country. Like before, all regressions contain industry, country, and year fixed effects. The interaction between the industry competition and the bidder's home country institutional quality is the key variable of interest. In Models (1)-(7), the estimated coefficients on the interaction term [$IC_{m,i,t-1} \times high\ institutional\ quality_{a,t-1}$] are significantly positive. The economic magnitude is also higher; in Model (1), we find that on average industry competition effect is 0.17 pp higher when the bidder's home country institutional quality is higher. The results support *H3* that the lower bidder announcement returns associated with higher takeover competition are mitigated when firms are from countries with better institutional quality.

Our results in this section are in line with the earlier studies on country-level governance (Cremers and Nair, 2005; La Porta et al., 1998), suggesting that the acquirers from countries with higher governance quality conduct better deals and agency costs are lower in these countries (see, for example, Young et al., 2008; Ellis et al., 2017). The results also support the studies of Starks and Wei (2013) and Bris and Cabolis (2008), who find higher premiums paid to targets by bidders from countries with poor governance standards. Our results suggest that bidders earn lower returns in competitive industries. However, if they are from countries having higher institutional or regulatory standards, the negative effect of higher industry competition mitigates, suggesting a limit above which the acquirer must withdraw from the deal.

4.6 Robustness tests

We examine the robustness of the effect of industry competition on announcement returns documented above and show the results in Table 4.8.

First, we follow Wang and Xie (2009) and calculate 11-day CARs to show the competition effect on returns in the alternative window of CARs. In Panel A of Table 4.8, we show that the

industry competition effect on the combined, bidder, and target CARs is similar, suggesting that results are not confined to the 5-day event window.

Second, we examine the variation in competition effect on the returns between competitive and non-competitive industries. Alexandridis, Petmezas, and Travlos (2010) find that acquiring public targets from less competitive takeover markets produces higher bidder returns and vice versa, arguing that bidders pay lower premiums in these markets. Accordingly, we want to investigate if the takeover synergistic and partition of the synergy is different in non-competitive target industries. To identify competitive and non- competitive industries, we use tercile and quintile distributions of industry competition. The industries lying in the 1st tercile and 1st quintile are non-competitive, while in the 3rd tercile and 5th quintile are competitive. We also use a dummy for higher industry competition (IC dummy) that equals one if the competition measure is above the median and zero otherwise. We show the results in Panel B of Table 4.8. In Models (1)-(9), the combined CARs of bidders and targets never appear to be significant either in competitive or non-competitive industry, suggesting that industry competition is neither value-increasing nor value-destructive for the combined firm. The acquirers earn higher gains if they take over targets from non-competitive industries, and targets in these industries experience lower gains. It echoes the argument of Alexandridis et al. (2010) that the potential for higher bidder returns exists only in non-competitive industries.

4.7 Conclusion

We study the effect of target industry competition on the announcement returns. We do not find evidence that the average combined returns of bidders and targets are higher in competitive takeover industries. The average returns to bidder (targets) shareholders are lower (higher) when the target firm is from an industry with higher competition. Our results show that the industry takeover competition significantly affects the gains to bidder and target shareholders, where bidders lose and the targets gain, but the combined value is close to zero. The negative association between industry competition and bidder returns indicates that bidders overpay for winning other raiders' bids. This negative relation mitigates when the bidder's home country institutional quality is higher, suggesting that good governance can prevent bidder managers from overpayment.

Our results are not because of industry takeover competition, acting as a proxy for country-level takeover competition. We control for takeover competition at the country-level in all our regression analyses, and our results on industry competition still hold. We extend the study of Alexandridis, Petmezas, and Travlos (2010) and show that there is considerable heterogeneity in

industry takeover competition that affects the announcement returns beyond the country-level takeover competition.

Table 4.17: Distribution by the target's industry

The table reports the number of target firms acquired, competition, bidder returns, target returns, and combined returns based on the target industry. The sample comprises M&As of listed targets reported in Securities Data Corporation (SDC) from 2003 to 2016. We consider majority control deals where the bidder holds a minority stake of the target (less than 50%) before the deal announcement and ends up with a majority stake (greater than 50%) after the deal. We use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). No. of targets is the total number of acquired target firms in each corresponding industry for the whole sample period. Mean competition is the yearly average competition in the target industry defined as the number of acquired targets divided by the number of registered targets in each country. The bidder and target CARs are the five-day cumulative abnormal returns around the announcement date calculated using the market model for the period (-255, -25). The combined CARs are the weighted average of the bidder and the target CARs. Total shows sample size, the sample mean competition, and mean CARs.

Industry	No. of targets	Mean competition (%)	Mean Bidder CARs (%)	Mean Target CARs (%)	Mean combined CARs (%)
Agriculture	6	5.071	.77	7.615	-6.935
Food products	19	6.978	2.985	.98	5.108
Soda	9	15.515	1.935	11.986	.837
Beer	5	9.008	.355	3.572	-4.074
Toys	2	2.067	-3.33	5.059	-.662
Fun	4	2.812	1.045	14.366	1.285
Books, printing & publishing	21	6.234	-1.593	2.779	9.303
Household consumer goods	5	6.662	.636	-2.24	-.891
Cloths apparel	12	12.921	1.887	10.945	.951
Healthcare	11	4.707	1.028	-1.56	.565
Medical equipment	2	11.852	-6.11	17.665	-4.487
Drugs	33	20.096	-.055	25.644	.581
Chemicals	74	7.998	.708	10.448	-2.127
Rubber & plastic products	22	3.103	1.43	4.799	4.589
Textile	8	3.914	3.021	-4.306	2.628
Construction material	11	4.914	-1.813	-2.579	-5.403
Construction	14	8.206	-.562	13.927	-4.49
Steel	26	2.352	-.073	5.626	.638
Fabricated products	17	4.011	1.092	7.334	-5.589
Machinery	4	3.539	-.667	8.194	.03
Electrical equipment	35	5.349	1.354	9.391	-7.907
Automobiles	17	4.996	-.453	3.918	-18.367
Ships	15	2.43	1.433	9.024	-6.371
Gold	5	4.054	-.485	10.753	.307
Mines	69	.644	-1.193	10.624	-2.848
Coal	49	2.105	-.155	4.817	-61.889
Oil, petroleum and natural gas	7	4.149	5.114	1.771	3.554
Telecommunication	60	4.623	.181	10.606	14.874
Personal services	15	6.913	1.719	9.059	.009
Business services	6	3.616	5.04	12.897	6.391
Computer	56	2.724	1.392	7.188	-11.078
Computer software	15	4.817	.068	13.103	.186
Electronic equipment	123	7.587	.764	12.575	.897
Lab equipment	52	5.554	1.4	11.751	-6.272
Paper	12	5.52	-.443	8.59	.096
Transportation	8	10.249	1.359	-3.477	13.083
Wholesale	21	1.929	3.681	4.378	1.994
Retail	41	4.594	.449	7.407	5.847
Meals	53	2.846	1.969	8.465	-7.925
Real estate	13	3.576	-.038	2.24	-1.372
Trading	25	2.999	.699	.676	-16.626
Others	62	6.722	1.767	1.117	-1.036
Total	1072	5.509	0.748	8.268	-3.975

Table 4.18: Descriptive statistics

The table presents descriptive statistics of all variables used in regression analysis. The sample covers all majority control M&A deals reported in Securities Data Corporation (SDC) from 2003 to 2016, where both the bidder and target are public firms. The bidder and target CARs are the 5-day cumulative abnormal returns around the announcement date that are calculated using the market model for the period (-255, -25). The combined CARs are the weighted average of the bidder and the target CARs. Takeover premium is the offer price ratio to the target's stock price four or two weeks before the deal announcement. Industry competition is defined as the percentage of listed targets acquired in each industry, year, and country. We use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). Country competition is the percentage of listed acquired targets in each year, industry, and country. The CARs, takeover premium, bidder, and target characteristics are winsorized at the top and bottom 1% level. Definitions of other variables are described in the Appendix D.

	N	Mean	Median	S.D.	min	max
Panel A: Cumulative abnormal returns and takeover premium						
Bidder CARs	1072	.007	.006	0.068	-0.198	0.277
Target CARs	1072	.083	0	0.232	-1	1
Combined CARs	1072	-0.04	.004	0.911	-0.261	0.081
Takeover Premium	1072	.113	.03	0.225	-0.613	0.983
Panel B: Takeover competition						
Industry competition	1072	.055	.013	.099	0.003	0.75
Country competition	1072	.064	.041	.094	0.002	0.9
No. of Bidders	1072	1.053	1	0.244	1	3
Panel C: Deal characteristics						
Payment method (dummy)	1072	0.462	0	0.499	0	1
Cross-border (dummy)	1072	0.233	0	0.423	0	1
Same industry (dummy)	1072	0.587	1	0.493	0	1
Panel D: Bidder and target characteristics						
Bidder run up	1072	-.007	-0.004	0.236	-.861	.902
Target run up	1072	.019	0	0.224	-.799	1.006
Combined run up	1072	-.005	-0.002	0.207	-.853	.9
Bidder leverage	1072	0.208	0.181	0.173	0	.894
Bidder Tobin Q	1072	0.498	0.501	0.223	.011	1.384
Bidder size	1072	14.54	14.563	2.412	7.642	19.636
Target leverage	1072	0.201	0.14	0.221	0	1.131
Target Tobin Q	1072	0.482	0.463	0.321	.008	2.176
Target size	1072	12.028	11.948	1.839	5.826	17.715
Panel E: Country characteristics						
GDP growth	1072	2.311	2.25	2.47	-5.697	14.526
GDP per capita	1072	10.418	10.606	.738	6.155	11.39

Table 4.19: Correlation Matrix

The sample consists of 1072 completed M&As reported in Securities Data Corporation (SDC) between 2003 and 2016. Both the bidder and target are public firms. We consider only those deals where the bidder owns less than 50% of the target's shares before the deal announcement and owns more than 50% after the deal completion. The 5-day cumulative abnormal returns (CARs) around the announcement date for both bidders and targets are calculated using the market model for the period (-255, -25). The combined CARs are the weighted average of the bidder and the target CARs. Premium is the offer price ratio to the target's stock price four weeks before the deal announcement. The key variable of interest ("Industry competition") is the percentage of listed targets acquired each year, industry, and country. We use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949) for industry classification. Other variables are defined in the Appendix D; ***, **, and * show statistical significance level at 1%, 5% and 10% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1						
2	-0.063*	1					
3	0.007	-0.131***	1				
4	-0.062*	0.997***	-0.134***	1			
5	-0.078**	0.205***	0.023	0.206***	1		
6	-0.012	0.060*	0.009	0.061*	0.055	1	
7	-0.009	-0.000	0.017	-0.000	0.019	0.006	1

(1) Bidder CARs

(2) Target CARs

(3) Combined CARs

(4) Takeover premium

(5) Industry competition

(6) Country competition

(7) No. of bidders

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 4.20: Univariate test

The table presents the univariate tests of the effect of industry competition on the bidder CARs, target CARs, combined CARs, and takeover premiums. The sample covers all majority control M&A deals reported in Securities Data Corporation (SDC) from 2003 to 2016, where both the bidder and target are public firms. The bidder and target CARs are the 5-day cumulative abnormal returns around the announcement date that are calculated using the market model for the period (-255, -25). The combined CARs are the weighted average of the bidder and the target CARs. Takeover premium is the offer price ratio to the target's stock price four weeks before the deal announcement. Industry competition is defined as the number of acquired targets divided by the total number of registered targets each year, industry, and country. The competition is lower (higher) in industries that fall below (above) the median competition. We use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). The CARs and takeover premium are winsorized at the top and bottom 1% level.

	Lower competition		Higher competition		Two tailed t-test	
	N	Mean	N	Mean	Difference	p value
Combined CARs	531	-0.075	541	-0.005	-0.070	0.212
Bidder CARs	531	0.013	541	0.002	0.011	0.005
Target CARs	531	0.051	541	0.114	-0.063	0.000
Takeover premium	531	0.082	541	0.143	-0.061	0.000

Table 4.21: Takeover competition and announcement returns

The sample consists of 1072 completed M&As reported in Securities Data Corporation (SDC) between 2003 and 2016. Both the bidder and target are public firms. We consider only those deals where the bidder owns less than 50% of the target's shares before the deal announcement and owns more than 50% after the deal completion. The 5-day cumulative abnormal returns (CARs) around the announcement date for both bidders and targets are calculated using the market model for the period (-255, -25). The combined CARs are the weighted average of the bidder and the target CARs, where weights are assigned based on equity's market value six days before the acquisition. The key variable of interest ("Industry competition") is defined as the number of acquired targets divided by the total number of registered targets each year, industry, and country. We use Fama-French 48 industrial categories for industry classification, excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). We define all variables in the Appendix D; T-statistics are shown in parenthesis, and Standard errors are corrected for heteroscedasticity (White,1980). ***, ** and * show statistical significance level at 1%, 5% and 10% respectively. Each regression controls for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

Dependent variables	(1) Combined CARs (-2, +2)	(2) Bidder CARs (-2, +2)	(3) Target CARs (-2, +2)
Industry competition	0.1664	-0.0648***	0.3346***
	(1.256)	(-2.860)	(2.972)
Country competition	0.0667	0.0242	0.4098***
	(0.665)	(0.910)	(3.562)
No. of bidders	0.0993	0.0007	0.0013
	(1.285)	(0.092)	(0.047)
Run up	-0.0977	-0.0140	-0.0655*
	(-0.670)	(-0.945)	(-1.875)
Payment method dummy	-0.0284	0.0102**	0.0577***
	(-0.604)	(1.965)	(3.943)
Cross-border dummy	0.0410	0.0007	-0.0101
	(1.309)	(0.124)	(-0.472)
Same industry dummy	0.0296	0.0016	-0.0072
	(0.959)	(0.342)	(-0.472)
Relative deal size	0.1191	-0.0092	-0.0141
	(0.795)	(-1.010)	(-0.929)
Bidder leverage	0.7391	-0.0093	
	(1.553)	(-0.474)	
Bidder Tobin Q	-0.7290	0.0225	
	(-1.296)	(1.258)	
Bidder size	0.0506	-0.0063***	
	(1.419)	(-4.079)	
Target leverage	-0.2437		0.0561
	(-1.222)		(0.976)
Target Tobin Q	0.1250		-0.0267
	(0.914)		(-0.574)
Target size	-0.0174		-0.0147***
	(-1.125)		(-2.953)
GDP growth	-0.0127	0.0019	0.0004
	(-0.513)	(0.881)	(0.058)
GDP per capita	-0.1255	-0.0340*	-0.0611
	(-0.340)	(-1.904)	(-1.197)
Constant	0.5828	0.4256**	0.7961
	(0.175)	(2.330)	(1.512)
Year, industry, and country dummies	Yes	Yes	Yes
N	1072	1072	1072
R^2	0.0551	0.1391	0.2332

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 4.22: Competition, takeover premium, and empire-building behavior.

The sample consists of 1072 completed M&As reported in Securities Data Corporation (SDC) between 2003 and 2016. Both the bidder and target are public firms. We consider majority control acquisitions where the bidder owns less than 50% of the target's shares before the deal announcement and owns more than 50% after the deal completion. Premium is the offer price ratio to the target's stock price four or two weeks before the deal announcement. The key variable of interest ("Industry competition") is the percentage of listed targets acquired each year, industry, and country. For industry classification, we use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). We define all variables in the Appendix D; T-statistics are shown in parenthesis, and Standard errors are corrected for heteroscedasticity (White,1980). ***, ** and * show statistical significance level at 1%, 5% and 10% respectively. Each regression controls for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

Panel A: Takeover premium

Dependent variables	(1) Premium (4 weeks before)	(2) Premium (2 weeks before)
Industry competition	0.3083***	0.1973*
	(2.861)	(1.805)
Country competition	0.4067***	0.3827***
	(3.574)	(3.508)
No. of bidders	-0.0033	0.0062
	(-0.117)	(0.227)
Payment method dummy	0.0571***	0.0528***
	(3.981)	(3.825)
Cross-border dummy	-0.0105	0.0286
	(-0.514)	(1.476)
Same industry dummy	-0.0051	0.0102
	(-0.346)	(0.704)
Relative deal size	-0.0159	-0.0198
	(-1.101)	(-1.563)
Target leverage	0.0571	0.0038
	(1.082)	(0.070)
Target Tobin Q	-0.0248	-0.0048
	(-0.577)	(-0.111)
Target size	-0.0144***	-0.0169***
	(-2.976)	(-3.638)
GDP growth	0.0008	-0.0015
	(0.118)	(-0.223)
GDP per capita	-0.0669	-0.0581
	(-1.339)	(-1.256)
Constant	0.8865*	0.8795*
	(1.718)	(1.833)
Year, industry, and country dummies	Yes	Yes
N	1072	1072
R^2	0.2353	0.2231

Panel B: Empire-building behavior

Dependent variables	(1) Asset growth	(2) PPE growth	(3) Capital exp.
Industry competition	1.6837**	4.9955***	0.0746**
	(2.003)	(2.669)	(2.140)
Control variables	Yes	Yes	Yes
Year, industry, and country dummies	Yes	Yes	Yes
N	965	958	1050
R^2	0.3595	0.2798	0.4585

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 4.23: Takeover competition and institutional quality of the bidder country

The sample consists of 1072 completed M&As reported in Securities Data Corporation (SDC) between 2003 and 2016. Both the bidder and target are public firms. We consider majority control acquisitions where the bidder owns less than 50% of the target's shares before the deal announcement and owns more than 50% after the deal completion. The 5-day cumulative abnormal returns (CARs) around the announcement date for bidders are calculated using the market model for the period (-255, -25). Industry competition is the percentage of listed targets acquired in each year, industry, and country. For industry classification, we use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). We define all variables in the Appendix D; T-statistics are shown in parenthesis, and Standard errors are corrected for heteroscedasticity (White,1980). ***, ** and * show statistical significance level at 1%, 5% and 10% respectively. Each regression controls for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bidder CARs (-2, +2)	Corruption	Effectiveness	Stability	Quality	Law	Voice	WGI index
Industry competition	-0.1958***	-0.2239***	-0.1545***	-0.2301***	-0.1859***	-0.0625*	-0.1717***
	(-3.663)	(-3.619)	(-6.149)	(-4.146)	(-3.460)	(-1.928)	(-4.979)
Country governance	0.0184**	0.0187	0.0266***	0.0152**	0.0212**	0.0005	0.0042
	(1.994)	(1.588)	(4.732)	(2.300)	(2.062)	(0.084)	(0.688)
Industry Competition x country governance	0.1730***	0.2010***	0.1663***	0.2067***	0.1622***	0.0034	0.1726***
	(2.988)	(3.060)	(5.155)	(3.478)	(2.801)	(0.091)	(4.376)
Country competition	0.0196	0.0177	-0.0183	0.0214	0.0209	0.0065	0.0089
	(1.080)	(0.980)	(-1.045)	(1.179)	(1.158)	(0.333)	(0.476)
Number of Bidders	-0.0005	0.0002	-0.0002	-0.0018	-0.0008	-0.0011	-0.0004
	(-0.065)	(0.034)	(-0.027)	(-0.256)	(-0.112)	(-0.143)	(-0.053)
Run-up	-0.0147	-0.0162	-0.0173	-0.0157	-0.0158	-0.0161	-0.0150
	(-1.006)	(-1.112)	(-1.205)	(-1.071)	(-1.090)	(-1.093)	(-1.023)
Payment method dummy	0.0083	0.0083	0.0095*	0.0083	0.0089*	0.0102**	0.0092*
	(1.609)	(1.609)	(1.957)	(1.638)	(1.750)	(1.999)	(1.812)
Cross-border dummy	-0.0000	0.0009	-0.0006	-0.0006	0.0005	-0.0000	-0.0003
	(-0.001)	(0.167)	(-0.110)	(-0.105)	(0.099)	(-0.007)	(-0.053)
Same industry dummy	0.0034	0.0040	0.0041	0.0039	0.0033	0.0043	0.0030
	(0.700)	(0.825)	(0.890)	(0.813)	(0.697)	(0.882)	(0.633)
Relative deal size	-0.0077	-0.0070	-0.0060	-0.0079	-0.0070	-0.0079	-0.0061
	(-0.825)	(-0.751)	(-0.621)	(-0.849)	(-0.832)	(-0.749)	(-0.660)
Bidder leverage	-0.0158	-0.0145	-0.0174	-0.0145	-0.0121	-0.0136	-0.0156
	(-0.799)	(-0.728)	(-0.883)	(-0.733)	(-0.601)	(-0.669)	(-0.787)
Bidder Tobin Q	0.0243	0.0208	0.0194	0.0230	0.0196	0.0208	0.0220
	(1.333)	(1.141)	(1.076)	(1.269)	(1.065)	(1.138)	(1.219)
Bidder size	-0.0053***	-0.0053***	-0.0044***	-0.0055***	-0.0050***	-0.0050***	-0.0049***
	(-3.637)	(-3.626)	(-3.249)	(-3.734)	(-3.655)	(-3.636)	(-3.324)
GDP growth	0.0013	0.0012	0.0015	0.0003	0.0013	0.0017	0.0016
	(0.792)	(0.738)	(0.907)	(0.163)	(0.799)	(1.025)	(0.955)
GDP per capita	-0.0108**	-0.0116**	-0.0060	-0.0114**	-0.0113**	-0.0028	-0.0062
	(-2.196)	(-2.211)	(-1.495)	(-2.372)	(-2.305)	(-0.611)	(-1.423)
Constant	0.1655***	0.1681***	0.0930**	0.1845***	0.1641***	0.0921*	0.1219**
	(3.165)	(3.098)	(2.122)	(3.429)	(3.238)	(1.858)	(2.537)
N	1072	1072	1072	1072	1072	1072	1072
R^2	0.1107	0.1089	0.1580	0.1167	0.1094	0.0925	0.1120

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 4.24: Robustness tests

The sample consists of completed M&As reported in Securities Data Corporation (SDC) between 2003 and 2016. Both the bidder and target are public firms. We consider only those deals where the bidder owns less than 50% of the target's shares before the deal announcement and owns more than 50% after the deal completion. The 5-day cumulative abnormal returns (CARs) around the announcement date for both bidders (BCARs) and targets (TCARs) are calculated using the market model for the period (-255, -25). The combined CARs (CCARs) are weighted average of bidder and target CARs. Industry competition is the percentage of listed targets acquired each year, industry, and country. For industry classification, we use Fama-French 48 industrial categories excluding financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). We define all variables in the Appendix D; T-statistics are shown in parenthesis, and Standard errors are corrected for heteroscedasticity (White,1980). ***, ** and * show statistical significance level at 1%, 5% and 10% respectively. Each regression controls for year, industry, and country fixed effects, whose coefficients are not shown for brevity.

Panel A: 11-day cumulative abnormal returns

Dependent variables:	(1) Combined CARs (-5, +5)	(2) Bidder CARs (-5, +5)	(3) Target CARs (-5, +5)
Industry competition	0.2238	-0.0725**	0.2041*
	(1.587)	(-2.243)	(1.861)
Control variables	Yes	Yes	Yes
Year, industry, and country dummies	Yes	Yes	Yes
N	1072	1072	1072
R^2	0.0572	0.1393	0.2244

Panel B: Competitive vs non-competitive industries

Dependent variables:	(1) CCARs (-2, +2)	(2) BCARs (-2, +2)	(3) TCARs (-2, +2)	(4) CCARs (-2, +2)	(5) BCARs (-2, +2)	(6) TCARs (-2, +2)	(7) CCARs (-2, +2)	(8) BCARs (-2, +2)	(9) TCARs (-2, +2)
1st tercile	0.0016	0.0195***	-0.0369*						
	(0.034)	(3.508)	(-1.927)						
3rd tercile	-0.0286	-0.0097	0.0497**						
	(-0.510)	(-1.489)	(2.267)						
1st quintile				-0.1008	0.0219***	-0.0628**			
				(-0.883)	(2.883)	(-2.315)			
2nd quintile				-0.0274	0.0016	0.0273			
				(-0.330)	(0.231)	(1.128)			
4th.quintile				-0.0835	-0.0139*	0.0495**			
				(-0.948)	(-1.907)	(2.000)			
5th quintile				-0.0297	-0.0180**	0.0563*			
				(-0.359)	(-2.030)	(1.870)			
IC Dummy							0.0368	-0.0177***	0.0338*
							(0.642)	(-3.530)	(1.821)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, industry, country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1072	1072	1072	1072	1072	1072	1072	1072	1072
R^2	0.0550	0.1514	0.2342	0.0561	0.1567	0.2446	0.0551	0.1438	0.2261

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Appendix D : Variable definitions of Chapter 4

Variable	Definition
Panel A: Cumulative Abnormal Returns and premium	
Bidder and target CARs	5-day cumulative abnormal returns around the announcement date. The CARs are calculated using the market model for the period (-255, -25). Source: DataStream.
Combined CARs	The weighted average of bidder and target CARs where weights are assigned on the market value of equity six days before the acquisition. The target weighted CARs are also adjusted for toehold. Sources: DataStream and Securities Data Corporation (SDC).
Takeover premium	Ratio of the offer price to the target's stock price four/two weeks before the deal announcement. Source: SDC.
Panel B: Takeover competition	
Industry competition	No. of acquisitions divided by listed targets in each industry, year, and country. Source: SDC and WorldScope.
Country competition	No. of acquisitions divided by listed targets in each year, and country. Source: SDC and WorldScope.
No. of bidders	No. of actual bidders in a deal. Source: SDC.
Panel C: Deal characteristics	
Payment method	Dummy variable: 1 for the purely cash-financed deal, 0 otherwise. Source: SDC.
Cross border deal	Dummy variable: 1 if cross border deal, 0 otherwise. Source: SDC.
Same industry deal	Dummy variable: 1 for same industry deal, 0 otherwise. Source: SDC.
Relative deal size	Deal value/Bidder market value of equity. Sources: SDC and World Scope
Panel D: Bidder and target characteristics	
Bidder and target run-up	The sum of abnormal returns using the market model for a window of 90 days up to 20 days before deal announcement. Source: DataStream.
Combined run-up	Weighted average of bidder and target stock price run-up, weights are based on the market value of equity. Source: DataStream.
Leverage	Long-term debt/total assets. Source: WorldScope.
Tobin's Q	(assets – book value of equity + market value of equity) /assets. Source: WorldScope.
Size	Natural logarithm of book value of assets. Source: WorldScope.
Panel E: Country characteristics	
GDP growth	Annual growth in real GDP. Source: World Development Indicators.
Log GDP per capita	Log of real GDP (current US dollars)/average population. Source: World Development Indicators.

5 Concluding remarks

The dissertation examines three research questions in the domain of mergers and acquisitions. First, we analyze whether firm corporate governance is portable and affects the bidder announcement returns in mergers and acquisitions. Second, we investigate if the portability effect translates into the higher governance of the combined firm by comparing ex-post governance of the combined firm relative to the ex-ante weighted average governance of the bidder and target. Third, we test the effect of the target's industry competition on takeover value and returns to bidder and target shareholders.

In Chapter 2, we study the corporate governance portability from bidders to targets in mergers and acquisitions and its impact on the bidder announcement returns. We find that the bidder's cumulative abnormal returns are higher in acquisitions where the bidder's corporate governance quality exceeds that of the target. This result suggests a positive valuation effect for bidder shareholders resulting from the portability of good firm corporate governance from the bidder to the target. We also find that this effect is stronger in cross-border deals and when bidders are domiciled in countries with better corporate governance. The results pass several robustness tests, including alternative measures of firm corporate governance and different sample periods.

Chapter 3 examines changes in corporate governance around mergers and acquisitions by comparing the ex-post corporate governance of the combined firm with the ex-ante weighted average governance of the bidder and target. We find that when the quality of the bidder governance is better than the target before the acquisition, the ex-post corporate governance quality of the combined firm is better than the ex-ante weighted average of each firm. In such cases, we document an improvement in board independence, audit committee independence, stock compensation, and minority shareholders protection average scores post-acquisition, suggesting that these firm-level attributes serve as potential channels that explain corporate governance improvement of the combined firm. We also find that operating performance between the combined firm and the weighted average of bidder and target improves when the bidder's governance quality is better than the target. Our results support the portability theory of corporate governance, suggesting that poorly-governed targets are better off if acquired by better-governed bidders.

Finally, in Chapter 4, we analyze how takeover competition in the target industry affects cumulative abnormal returns (CARs). We find that the industry competition does not affect the combined CARs of the bidder and target, while the effect on bidder (target) CARs is negative (positive). The results corroborate the overpayment argument of acquiring targets from competitive industries to win other raiders' bids. We also document that the lower bidder announcement returns

associated with higher takeover competition are mitigated when bidders come from countries with better institutional quality, suggesting that country governance can prevent bidder managers from overpaying the targets. Overall, the results suggest that the industry competition does not affect the value created in M&As, but it affects the way those gains are distributed between the bidder and target. The findings are robust to alternative definitions of industry competitiveness.

The work offers relevant policy insights for regulators and policymakers on how a well-functioning market for corporate control, free of inefficient frictions, can be a vehicle for transferring good corporate governance practices between firms, with positive consequences for the market value of firms' equity. We show how an efficient takeover market can increase the combined firm's governance quality and operating performance through the portability channel. As the firms differ in the quality of firm corporate governance, regulators must decide whether shareholders can believe in the portability of governance standards as a motive behind M&As. The results also provide insights how the takeover market responds to competitive industries. As the target firms differ in the degree of industry competition, regulators can use the study as a stepping stone towards understanding the different aspects of takeover competition. The competition puts pressure on managers, and only value-enhancing deals should be pursued; otherwise, there can be overbidding.

This work is subject to certain limitations that open important avenues for future research. Further research should scrutinize how the returns from M&As are distributed between the acquirer and the target stockholders as a function of the firm corporate governance gap. Our results can stimulate future research to investigate how the bidder-target governance gap affects the success of an M&A deal. We have focused on control acquisitions, and the work we conducted could be applied to partial acquisitions or joint ventures. There is no reliable source of firm-level governance data for private bidders and targets, the work on privately combining firms can enhance the generalizability of the portability theory. It would also be interesting to investigate how the bidder-target gap in the other two dimensions of ESG, environmental and social, affects the combined firm performance in these dimensions. Finally, the results stimulate further work to examine how the difference in the bidder and target industry competition affects returns in conglomerate acquisitions.

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