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Essays on CEO Background and Corporate Performance

Busra Agcayazi

A dissertation submitted
to the John Chambers College of Business and Economics
at West Virginia University

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in
Finance

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ABSTRACT

ESSAYS ON CEO BACKGROUND AND CORPORATE PERFORMANCE

Busra Agcayazi

This dissertation is composed of three distinct chapters, all of which revolve around the core subject of how CEO background attributes impact a company's investment decisions and the resulting corporate outcomes. The first chapter entitled, "*CEO International Background and Cross-Border Mergers and Acquisitions*" investigates whether having a CEO with an international background affects U.S. firms' cross-border merger and acquisition (M&A) activities. By defining international background as having either non-U.S. nationality, overseas education, or foreign work experience, this chapter provides robust evidence that when a CEO possesses these characteristics, the firm is more likely to acquire international targets, and these deals are more value-enhancing. Moreover, when the firm's CEO has all of these international characteristics (compared to just one), both the likelihood of cross-border deals and announcement returns increase. The observed gains are related, at least in part, to CEOs with this background being associated with lower acquisition premia and mitigating the negative impact of paying these deals with equity.

The second chapter entitled, "*CEO Cultural Legacy and Corporate Investment Efficiency*" examines the role of CEO cultural legacy on corporate investment efficiency. By associating nationalities with Hofstede cultural dimensions, this chapter assesses CEO risk propensity and explores the influence of uncertainty avoidance, long-term orientation, individualism, masculinity, indulgence, and power distance on over- and under-investment outcomes. The findings reveal that CEOs hailing from high levels of uncertainty-averse and long-term-oriented cultures exhibit a negative association with investment inefficiency and a reduction in overinvestment. Conversely, CEOs originating from high levels of individualistic, masculine, indulgent, and power-distant cultures demonstrate a positive association with investment inefficiency and a propensity to overinvest. The significance of CEO culture-related decisions is more pronounced under conditions of low external monitoring. The results provide empirical evidence supporting the inheritance of risk preferences and their ramifications on corporate decision-making. Furthermore, the findings remain robust after accounting for the firm and other CEO attributes, and alternative definitions of risk, and survive several robustness and endogeneity tests.

The final chapter entitled, “*Foreign Experience of Acquirer CEOs and Shareholder Returns*” presents empirical evidence demonstrating the implications of diverse CEO backgrounds in the context of domestic mergers and acquisitions (M&As). Findings suggest that U.S. firms led by CEOs possessing foreign experience realize significantly positive abnormal returns during the three-day window surrounding deal announcements. The market response is more favorable when CEOs possessing foreign experience pursue non-public targets, rather than their public counterparts, and when they pay particularly with stock. These executives tend to conduct larger deals, pay a lower premium, and the target firms experience a significant decline in cumulative abnormal returns. The findings demonstrate substantial resistance to the “cream rises to the top” phenomenon and withstand several endogeneity and robustness tests. The combined evidence supports the hypothesis that foreign experience is associated with CEOs’ enhanced ability to identify high-synergy targets by mitigating potential home biases, and effectively negotiating and structuring domestic deals, resulting in an increase in bidder shareholder value.

DEDICATION

To my dear parents, Sehriban and Ali Agcayazi, who have provided unwavering support throughout my academic journey, I dedicate this dissertation. Your wisdom, courage, sacrifices, and determination in building a bright future for our family have inspired my motivation and persistence.

To my loving husband, Dr. Furkan Yilmaz, who has stood by my side through thick and thin, your encouragement and constant support have enabled me to achieve this milestone. Thank you for always believing in me even when I doubted myself. Your love has been my safe haven amidst life's turbulent waters, and for that, I am eternally grateful.

And, to my precious son, Jacob Kerem Yilmaz, who has brought joy to my heart, I dedicate this work to you. May my achievements serve as an example of perseverance and encourage you to pursue your own goals. Remember that with determination, hard work, and commitment, anything is possible.

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TABLE OF CONTENTS

Chapter 1: CEO International Background and Cross-border Mergers and Acquisitions

1.1 Introduction........ 1
1.2 Review of Related Literature........ 6
1.3 Data, Variables, and Summary Statistics........ 10
1.4 Empirical Models and Results........ 18
1.5 Conclusion........ 30
1.6 Tables........ 37

Chapter 2: CEO Cultural Legacy and Corporate Investment Efficiency

2.1 Introduction........ 70
2.2 Literature Review and Hypothesis........ 73
2.3 Research Methodology........ 79
2.4 Data and Summary Statistics........ 82
2.5 Empirical Results........ 83
2.6 Conclusions........ 90
2.7 Tables........ 95

Chapter 3: Foreign Experience of Acquirer CEOs and Shareholder Returns

3.1 Introduction........ 125
3.2 Literature Review........ 129
3.3 Data and Summary Statistics........ 131
3.4 Empirical Models and Findings........ 136
3.5 Conclusions........ 145
3.6 Tables........ 149

Chapter 1: CEO International Background and Cross-Border M&As[1]

1. Introduction

Cross-border mergers and acquisitions (M&A) have emerged as a popular corporate strategy for rapid expansion and a vital tool for companies in pursuit of new markets, technologies, and capabilities. Corporations acquire international targets to enlarge their scale, diversify the scope of their contemporary business, ease customer access, expand products to drive growth, innovate and transform, and remove competition within an industry (Nadolska and Barkema, 2007; Haleblian, Devers, Carpenter, and Davison, 2009). While these corporate activities have been a popular means of foreign investment for decades, their success (or lack thereof) continues to attract significant scholarly attention in several research fields. This paper adds to the literature investigating the influence of the CEO on M&A activity and performance. Building on prior studies that examine how CEO attributes, culture, informational advantage, and familiarity-bias, affect firms' decision-making and outcomes; we test whether the CEO's international background is related to the likelihood and outcome of the firm's international M&As. More specifically, our main conjecture is that the CEO's international background, measured by non-U.S. nationality, foreign work experience, and overseas education, is positively correlated with the firm's propensity to initiate cross-border deals and that these deals have more favorable outcomes.

Cross-border transaction volume was $1.2 trillion in 2018, representing 30% of global M&A volume, compared to 28% in 2017 and 20% in 1991.[2] Despite the growing popularity of international mergers, when companies expand overseas, there are unique complexities associated with establishing operations outside their home country. The peculiarities of an alien system add an extra layer of friction that can impede mergers. For example, prior research finds that difference in culture is one of the factors that deter negotiations, inhibit or cause deals to fail (e.g., Erel, Liao, and Weisbach, 2012; David and Singh, 1994), and adversely affect the post-merger performance (e.g., Cartwright and Schoenberg, 2006; Cartwright and Cooper, 1993; Nguyen, Hagendorff, and Eshraghi, 2018).

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[1] This essay is based on a joint work with Ann Marie Hibbert and Thibaut Morillon. We thank seminar participants at the 2022 American Economic Association (AEA), the 2021 Financial Management Association (FMA), the 2021 Midwest Finance Association (MFA), the 2020 Southern Finance Association (SFA), the 2020 Southwestern Finance Association (SWFA), and the 2020 International Corporate Governance Society (ICGS) annual meetings for helpful comments.

[2] JP Morgan, 2019 Global M&A Outlook. https://www.jpmorgan.com/insights/research/2019-ma-global-year-outlook

The extant literature finds that CEOs play an essential role in M&A decisions (Porrini, 2004; Harford and Li, 2007; Malmendier and Tate, 2008; Yim, 2013; Leung, Tse, and Westerholm, 2019). As the key decision-maker, a CEO's background, and behavioral traits, e.g., narcissism (Aktas, Bodt, Bollaert, and Roll, 2016; Chatterjee and Hambrick, 2007), home bias (Chung, Green, and Schmidt, 2018; Jiang, Qian, and Yonker, 2018), and overconfidence (Malmendier and Tate, 2008) influence target selection and overall performance of acquisitions. Furthermore, Le and Kroll (2017) show that CEOs with international experience, supported by global perspectives and networks, provide valuable skills that can aid in processing complex and dynamic information, hence, providing their firms a competitive advantage.

As firms expand internationally, it becomes more important for top executives, specifically CEOs, to have a background aligned with the goals of their corporations, for example, being sensitive to the culture of the economies in which the firm operates or plans to expand into. In highlighting the importance of cultural synergies in target selection, former CEO of Cisco Inc., John Chambers states, "when you buy a company, everything is negotiable except strategy and culture."[3] Having an international background may broaden the CEO's horizon and equip her to better adapt to new and challenging environments.[4] CEOs who have lived, studied, or worked overseas may be better able and willing to explore new international prospects and opportunities, which may ultimately result in more efficient control and management of international operations. We posit that international background will increase the CEO's knowledge and experience with different cultures, norms, and legislative frameworks, which could directly impact their propensity to conduct cross-border acquisitions and improve the performance of these deals.

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[3] During his 20-year tenure at Cisco, Chambers acquired 196 tech targets, 30 of which were international targets: making him the most frequent acquirer in our sample.

We use the sample of all U.S. firms that engage in M&A activity between 1996 and 2018 to conduct a comprehensive analysis of whether, and to what extent the CEO's international background is associated with the firm's merger activity, as measured by the target selection and merger outcome. Our international background measure considers the CEO's nationality, country(ies) of higher education, and international work experience. In the first stage of our empirical investigation, we test whether CEOs with an international background, as measured by these three characteristics, i.e., having a non-U.S. nationality, having a degree from a university outside the U.S., or having worked overseas, are more likely to attempt cross-border deals. Our findings support this hypothesis as we find that compared to firms with CEOs who are Americans and who have never worked or studied overseas, firms with CEOs having each of these characteristics are significantly more likely to attempt international deals. Furthermore, compared to CEOs with only one of these characteristics, firms led by CEOs with all three characteristics are even more so.

While the finding that international background increases the likelihood of attempting cross-border deals by around 11% is intuitively appealing, an arguably more important question is whether these deals are value-enhancing. There are two opposing theories for the outcome of these deals. On the one hand, consistent with our main conjecture, if having international background reduces friction in cross-border deals (see, e.g., Giannetti, Liao, and Yu, 2015), then these acquisitions should be value-enhancing. However, on the other hand, if CEOs with international backgrounds overestimate the value of their experience and are overconfident when they attempt these deals, this could result in an adverse market reaction (see, e.g., Chung, Green, and Schmidt, 2018). Building on this argument, we posit that a CEO's international background adds value to cross-border M&A deals by streamlining negotiations and facilitating the integration process. Our results show that having a CEO with an international background is positively related to the bidder's abnormal returns in the three-day window surrounding the announcement of cross-border deals. Furthermore, having all three of the international background characteristics further increases the announcement of abnormal returns by 6.5%.

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[4] Throughout this paper, use of the pronouns her/him, she/he are meant to be gender neutral and are therefore not meant to refer to any specific gender.

Investigating the source of value creation, we find that when U.S. firms acquire overseas targets, CEOs with all three international characteristics add value by paying lower acquisition premiums and mitigating the negative impact of paying these acquisition deals with stock, as opposed to cash. Evaluating the importance of CEO longevity, we find that, among the firms in our sample, about 65% of the CEOs are in that position for five years or less at the time of their first cross-border deal. Moreover, firms led by CEOs with shorter tenures and international backgrounds, earn significantly higher announcement returns when they make international acquisitions. These findings suggest that firms are most probably aware of the benefits of a top executive's international background in the context of cross-border M&As. Based on these results, it is most probable that an endogenous matching between U.S. firms who plan to undertake cross-border acquisitions and CEOs who have an international background is at work.[5] Therefore, we do not suggest a causal interpretation of our results. However, our findings of how the CEO's international background is associated with the firm's cross-border acquisition activities are certainly noteworthy.[6] Finally, we analyze how a CEO's experience specific to the target country affects the deal outcome. By considering the international background to bestow "familiarity", we do not find these deals to be value-enhancing.

Our study contributes to M&A literature in several ways. First, while a number of earlier studies examine the effect of CEO characteristics on the success of M&As, only a few investigate issues related to cultural dynamics (e.g., Guiso, Sapienza, and Zingales, 2006; Stahl and Voigt, 2008), national culture (Ahern, Daminelli, and Fracassi, 2015), and cultural distance (Morosini, Shane, and Singh, 1998). Moreover, most of these studies examine culture either at the national-level or firm-level (Chatterjee, Lubatkin, Schweiger, and Weber, 1992; Chakrabarti, Gupta-Mukherjee, and Jayaraman, 2009) and only investigate the post-merger return performance with diverging results. Because the question is still open, we investigate the relation between the CEO's international background and the abnormal returns to cross-border acquisitions. To the best of our knowledge, this is the first study to explore dimensions of culture at the CEO-level, and the first to link international background to target selection and deal outcome. Second, we show how information advantage can impact CEOs' target selection and deal outcomes. Third, extending the line of research on the influence of CEO attributes on firm outcomes, we provide evidence on the interaction between the CEOs' international background and the firm's cross-border M&A activities. Fourth, we conduct a comprehensive examination of the CEO's international characteristics and their role in cross-border M&A transactions.[7] Our results survive a placebo test and multiple robustness tests.

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[5] See, for example, Malmendier and Tate (2005) who investigate the effect of having an overconfident CEO on the firm's investment policy and Benmelech and Frydman (2015) who acknowledge a similar concern in their study of how having a CEO with military service is associated with the firm's corporate decisions and outcomes.

[6] We thank an anonymous reviewer for this suggestion.

The rest of the paper is organized as follows: Section 2 reviews the literature on the influence of a CEO's background on cross-border M&As; Section 3 describes the data, the sample construction, and variable definitions, and provides summary statistics; Section 4 presents the empirical models, results, and robustness tests; and Section 5 provides concluding remarks.

2. Review of Related Literature

The characteristics of a firm's executives have been shown to impact corporate policies and firm performance (see, e.g., Henderson and Hutton, 2018; Custódio and Metzger, 2014; Malmendier, Tate, and Yan, 2011). Compared to other C-suite members, CEOs' skills and abilities are unique resources that can impact the company's success (Daily, Certo, and Dalton, 2000; Norburn, 1989). Prior research investigates how the CEO's background attributes affect investment styles, R&D investments, and other corporate investment decisions (Henderson and Hutton, 2018; Dittmar and Duchin, 2015). Bernile, Bhagwat, and Rau (2017) find that CEOs who suffer fatal disasters without tremendously negative outcomes are more aggressive risk-takers. Some studies focus on the CEO's prior career experiences. These studies include Benmelech and Frydman (2015), who provide evidence that military CEOs engage in lower corporate investments and their firms perform better during industry downturns, Custódio and Metzger (2014), who show that CEOs who are financial experts hold less cash and use more debt, and Hu and Liu (2015), who find that CEOs with more diverse employment history are less likely to be constrained by inadequate internal financing because the CEO's rich network assist in mitigating information asymmetry and result in increased access to external funds. In a similar vein, Barker and Mueller (2002) suggest that R&D spending is higher in companies with CEOs who have science-related education.

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[7] The role of the birthplace of the CEO (Chung, Green, and Schmidt, 2018), education-state-target selections (Wang and Yin, 2018), and experiences (Stroup, 2017) are individually studied in the domestic merger context.

2.1 Propensity to Acquire Cross-border Targets

A strand of literature that is closely related to our study investigates how the CEO's international background influences his investment behavior and the firm's performance (e.g., Le and Kroll, 2017; Carpenter, Sanders, and Gregersen, 2001; Daily, Certo, and Dalton, 2000). Building on earlier findings that international experience improves awareness of societal stakeholders (Sambharya, 1996; Roth, 1995), Slater and Dixon-Fowler (2009) find that having a CEO with international assignment experience improves the firm's corporate social performance. International experience influences personal values by causing greater open-mindedness, increased understanding, respect, and a sense of responsibility for others (e.g., Black and Duhon, 2006; Chieffo and Griffiths, 2004). Overseas assignments involve a much greater range of responsibilities than domestic ones (Suutari and Makela, 2007) and allow for more exposure to foreign value mechanisms, languages, and organizational environments (Ricks, Toyne, and Martinez, 1990). Building on this branch of literature, we investigate whether a CEO's international background influences the choice of acquisition targets. We argue that increased awareness of social prospects, and open-mindedness toward different legislations and individuals, will cause a CEO with an international background to be more likely to undertake cross-border M&As compared to CEOs without an international background.

2.2 Announcement Returns

According to Athanassiou and Nigh (1999), international assignment experience can provide CEOs with unique skills, perspectives, and professional connections, that assist them in better managing multinational corporations and overseas operations. Carpenter, Sanders, and Gregersen (2001) argue that CEOs with overseas experience create value for their firms by being valuable resources. Building on this argument, we posit that a CEO's international background will add value to the cross-border M&A deal by reducing ambiguity in negotiations and thereby facilitating the integration process. This argument is not new to M&A literature. For example, it is not dissimilar to studies that investigate the effect of cultural awareness in the context of cross-border M&As. Related studies that investigate how culture affects target selection and acquisition performance include that of Ahern, Daminelli, and Fracassi (2015), who show that greater cultural distance results in lower announcement returns, and cultural familiarity with a geographic location may ease the process of merging, leading to successful local mergers.

While Ahern, Daminelli, and Fracassi (2015) focus on the effect of culture at the country-level, others have considered the effect of culture at the firm- and individual-level and obtained mixed results. For example, Chatterjee, Lubatkin, Schweiger, and Weber (1992) find that executives' discernment of cultural differences between acquirers and targets adversely impacts acquirer announcement returns. On the other hand, Chakrabarti, Gupta-Mukherjee, and Jayaraman (2009) investigate the effect of cultural affinity on M&A performance and suggest that despite popular opinion, greater cultural distance leads to better post-acquisition long-term performance. Therefore, we investigate the relation between the CEO's international background and the abnormal returns to cross-border acquisitions.

2.3 Country-Specific International Background

Whereas our first two research questions build on the existing literature and focus broadly on the global skills that an international background provides, it is logical to expect that the CEO will also acquire country-specific skills that will affect his beliefs and behavior. Therefore, we investigate whether international deals conducted in countries in the CEO's background create value. We refer to these as countries that the CEO is "familiar" with and focus on two potential channels that are not mutually exclusive, (i) informational advantage and (ii) familiarity bias.

Firsthand knowledge of local legislation (in target countries) can give the CEO an informational advantage that can create value by helping him to be aware of and bid on optimal targets. Moreover, memberships in social network groups, i.e., international societies and alumni associations, could provide critical access to information flow that may not otherwise be readily available. The informational advantage literature proposes that social ties decrease the costs of collecting information and provide CEOs with new investment prospects (Wang and Yin, 2018; Cohen, Frazzini, and Maloy, 2008).

Familiarity bias refers to the individual's preference for situations and environments that are already known. The finance literature documents evidence of investors being prone to familiarity bias, for example, the propensity to invest in local assets or hold domestic stocks (e.g., Coval and Moskowitz, 1999). Karolyi and Stulz (2003) suggest that home bias serves as a barrier to international investment between domestic and foreign investors, and it can lead to the over-optimism of domestic investors toward home assets. In the domestic M&A context, Wang and Yin (2018) show that CEOs are significantly more likely to acquire firms headquartered in states where bidding CEOs received their undergraduate or graduate degrees. Additionally, some studies provide evidence that CEOs are significantly more likely to acquire targets near their birth states (Jiang, Qian, and Yonker, 2018; Chung, Clifton, and Schmidt, 2018).

Familiarity bias could lead to overconfidence in target selection and negotiation and thereby adversely impact the deal outcome. Familiarity has been related to overconfidence in other studies (Odean, 1999; Hirshleifer and Luo, 2001; Leung, Tse, and Westerholm, 2019). Suggesting a strong connection between corporate investments and overconfidence (Hirshleifer, Low, and Teoh, 2012; Ben-David, Graham, and Harvey, 2013), the literature proposes that overconfident CEOs commit to value-destroying acquisitions because they overestimate their local networks and their ability to generate returns (Chung, Clifton, and Schmidt, 2018). Malmendier and Tate (2008) find that overconfident CEOs have a greater tendency to execute deals but that investors respond less positively to mergers announced by those CEOs. Being acquainted with cultural norms, markets, or laws may increase the CEO's confidence in initiating takeovers in that country. Therefore, in our final research question, we investigate whether the benefits derived from the informational advantage in "familiar" countries will outweigh the potential negative effect of familiarity bias.

3. Data, Variables, and Summary Statistics

3.1 Data and Sample

Our deal-level data sample is mainly from two sources: we use (i) the Securities Data Company (SDC) Platinum database to identify U.S. domestic and cross-border M&As and the status of the deals, and (ii) BoardEx global leadership database to obtain biographical information on Chief Executive Officers (CEOs). We complement BoardEx data with Institutional Shareholder Services (ISS) and ExecuComp databases to fill in (or verify) some missing employment and CEO-firm data. The initial sample includes all domestic and international M&A deals announced by U.S. firms between January 1996 and December 2018.[8] Our choice of starting date is because the ISS coverage begins in 1996, and the SDC sample is more reliable starting in the late nineties. Following prior literature, we require that the acquirer is included in the Center for Research in Security Prices (CRSP) and Compustat during the event window. The CEO background information we obtain from BoardEx includes the CEO's nationality, gender, age, education, and employment. BoardEx also provides information on countries overseas where the CEO has worked, and information on their overseas education, i.e., institution and degrees obtained. We also collect information on whether the CEO obtained a graduate degree and if it is in business or law. After merging both databases and applying common filters used in the cross-border M&A literature, e.g., dropping deals for which the percent owned after the transaction is less than 50; the final sample contains 37,278 deals of which 29,658 are domestic, and 7,620 are cross-border deals. There are 6,122 unique CEOs in the sample. Appendix A provides the details of our data-cleaning steps.

Table 1 presents the frequency of international M&As by target nations. Similar to prior studies in the cross-border M&A literature (see, e.g., Ahern, Daminelli, and Fracassi, 2015), the United Kingdom (U.K.) features in most of the deals (19%), with U.S. firms acquiring 1,443 targets in the U.K. between 1996 and 2018. Other popular target countries are Canada, Germany, France, and Australia, each accounting for greater than 5% of cross-border deals. Table 2 shows the distribution of cross-border deals by CEO nationality over our sample period. Panel A of Table 2 shows that, as expected, most deals are by American CEOs. However, the number of deals by non-American CEOs is a non-trivial 10.4%. While there is an overlap between the top 10 target nations and the top 10 nationalities of non-American CEOs shown in Panel B of Table 2, there are a few notable differences[9]. For example, most of the non-American CEOs' deals are conducted by Canadian or British nationals, accounting for 20.1% and 17.4%, respectively.

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[8] BoardEx coverage begins in 1999 but it tracks CEO biographies prior to 1999.

3.2 International Background Measures

To examine the relation between the CEO's international background and the firm's M&A activities and outcomes, we focus on several characteristics that could contribute to the CEO having a more global perspective or being more willing to undertake a cross-border acquisition. The *International Background Characteristics* we focus on are the CEO's *nationality*, countries of higher *education*, and countries of prior *work experience*. We define three indicator variables that are measured before each deal:

(a) *Non-American* is zero if the CEO is an American, and one if the CEO has a nationality from a country other than the U.S.

(b) *Non-U.S. Education* is zero if the CEO has all his post-high school education from U.S. institutions, and one if the CEO pursued at least one degree at an institution outside of the U.S.

(c) *Non-U.S. Employment* is zero if the CEO's prior employment is only with firms headquartered in the U.S., and one if the CEO worked at least at one firm overseas before the deal.

We also construct a fourth measure of the CEO's international background based on these three characteristics:

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[9] A test of difference of frequencies by the analyzed attributes is conducted. The Spearman's rank correlation suggests that the top ten target countries and the top ten CEO nationalities are not significantly correlated (Spearman's rho is 0.309).

(d) *IB3* is one if the CEO has all three of the *International Background* characteristics, i.e., is a *Non-American,* has *Non-U.S. Education,* and has *Non-U.S. Employment* history; and zero otherwise.[10]

Panel A of Appendix B summarizes the definition of each measure and the data sources we use to construct them.

3.3 Announcement Returns and Control Variables

To measure abnormal returns around the announcement of cross-border M&A deals, we obtain stock returns and the returns on the CRSP value-weighted index from the CRSP. In our multivariate analysis described later, we control for several CEO, acquirer, deal, and target nation characteristics that the prior literature shows influence managerial decision-making generally, and M&A transactions in particular. We obtain firm-level accounting information for the construction of some control variables from Compustat. Appendix B provides the definition and source of each of these controls, and we discuss each of them below.

The CEO characteristics that we include as controls are (1) the field of study for his degree, (2) the length of time that he has been the CEO of the firm at the announcement, (3) the CEO's age at the time of the deal, *Age*, (4) whether or not CEO has citizenship, degree, or work experience in the target country before the deal, *Country Experience,* and (5) whether or not the CEO has previous international M&A experience at the time of the deal. The CEO's education is shown to influence his decision-making (Queiró, 2016; Bertrand and Schoar, 2003; Graham, Harvey, and Puri, 2013). King, Srivastav, and Williams (2016) find that bank CEOs with an MBA tend to take on more risk and the banks they lead outperform their peers. There is also evidence that CEOs may be hired because of their educational background. Palia (2000) reports that firms in more regulated industries are more likely to hire CEOs with a law degree to deal with legal actions and government agencies. Building on the findings in these prior studies, we include the indicator variable *Business or Law,* which takes a value of one for CEOs who obtain a degree in law and/or business prior to deal announcement, and zero otherwise. Yim (2013) finds a significant relation between the CEO's tenure and her propensity to engage in M&A activity. Using a sample of both domestic and cross-border M&A deals by U.S. firms, Yim (2013) provides evidence of a non-linear relation between the CEO's tenure, which is a proxy for the level of entrenchment, and the firm's M&A activity. Specifically, for those CEOs with shorter tenure, i.e., less than five years, which is the median tenure in Yim's (2013) sample, the propensity to acquire is increasing in the CEO's tenure. On the other hand, for CEOs with longer tenure (above five years), each additional year of tenure does not have a similar positive relation to the CEO's willingness to engage in M&A activity. Our control variable, *Tenure*, is the log of the CEO's tenure at the time of the deal.

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[10] In unreported results, we also construct measures for "at least one of the international characteristics" and "at least two of the international characteristics". For ease of exposition, we report results for when the CEO has each of the three characteristics or all three characteristics. Results for the other measures are available from the authors upon request.

Based on the extant M&A literature, we include seven acquirer characteristics[11] to control for the firm's financial condition; *Capital Intensity,* calculated as the proportion of capital expenditures to total assets*; Leverage,* computed as the ratio of the sum of debt in current liabilities and long-term debt, to total assets; *Cash Holding,* refers to the ratio of the sum of cash and short-term investments to total assets; *ROA,* calculated as the ratio of net income to total assets; *Market-to-Book (MTB*), the ratio of the market value of the firm's equity to the book value of equity; and *Firm Size,* defined as the log of total assets. Additionally, since Aktas, de Bodt, and Roll (2013) and others show that the firm's prior experience with M&As affects deal performance, we include the variable *Firm Previous CBMA*, which takes a value of one if the acquirer has previous international M&A experience, and zero otherwise.

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[11] In untabulated analysis, we identify multinational bidders (MNC) and include a binary variable to control for the bidder firm's propensity to acquire international targets. The results do not change and continue to remain significant.

We consider five deal characteristics. The first four are indicator variables meant to capture the nature of the deal. Moeller, Schlingemann, and Stulz (2005) suggest that it is more likely to realize losses in hostile deals versus friendly deals; and Officer (2004) finds that it is less likely to renegotiate deals when there is a collar agreement in place, as the collars reduce the need for renegotiation. Furthermore, Jennings and Mazzeo (1993) find that deals with high initial premiums are less likely to be challenged by third-party bids, and Luo (2005) finds that companies that announce merger deals after definitive agreements are less likely to breach the contract as it incurs heavy penalties and costs. Building on these findings, we include *Friendly Deal*, which takes the value of one if the deal is recommended by the target company's management, while hostile and neutral deals take the value of zero*; Collar* takes the value of one when the equity swap consideration offered depends on an established range, and zero otherwise; *Challenged Deal,* is one if an outside firm instigated an offer for the target while there was a pending bid, and zero otherwise; and *Definitive Agreement* is one if there is public disclosure on a definitive agreement that was carried out by the parties, and zero otherwise.

There is mixed evidence on how the method of payment affects the market's reaction to the announcement of cross-border M&A deals. For example, Moeller, Schlingemann, and Stulz (2004) and Rossi and Volpin (2004) find that the market favors cash-financed deals due to reduced information asymmetry. On the other hand, Alexandridis, Antypas, and Travlos (2017) study value creation within a U.S. sample of M&A deals between 1990 and 2015 and report that especially post-2009, stock financed deals are no longer value-destroying for acquirers. Fuller, Netter, and Stegemoller (2002) suggest that the acquirer's return is greater when the bidder offers stock, and the target is a private company. Additionally, Dutta, Saadi, and Zhu (2013) and Eckbo and

Thorburn (2000) report that investors favor stock-financed deals. Therefore, we include the indicator variable, *Stock*, which is one when 100% of the deal is financed with stock, and zero otherwise.

Prior studies find that differences in language between the parties in M&A deals have a positive impact on the combined announcement returns (Ahern, Daminelli, and Fracassi, 2015). Thus, we expect lower returns when the target is in an English-speaking country. We include *Language*, which is an indicator variable taking a value of one if the primary language spoken in the target country is English, and zero otherwise. Economic differences are shown to be an essential driver of the decision to engage in cross-border M&As (Erel, Liao, and Weisbach, 2012). To control for the macroeconomic conditions in the target countries and differences in taxation, we include *GDP Growth,* which is the annual GDP (real) per capita growth rate for the target nation in the acquisition year; and *Corporate Tax Rate,* which is the difference between the effective corporate tax rates in the acquirer and target countries.

3.4 Univariate Comparison of Cross-Border and Domestic M&As

Table 3 compares cross-border and domestic M&As based on CEO characteristics in Panel A, and deal characteristics in Panel B. Panel A of Table 3 shows that when CEOs have any of the three international background characteristics, the share of cross-border deals is larger. For example, 40% of the deals conducted by Non-American CEOs are international, while only 24% of deals conducted by Americans are such deals. Similarly, 31% (28%) of CEOs who have studied (worked) overseas conduct an international deal while 20% (18%) of the U.S. CEOs announce an international deal. Around 45% of deals announced by CEOs with all three of the characteristics are international deals, while only 25% of deals by CEOs with no international background are international. We report the results of tests for differences of proportions within international and domestic deals, which confirm that the differences in the proportion of CEOs with each of the international background measures compared to those without that background are statistically significant. For example, the proportion of Americans to Non-American in the cross-border deal sample (90% vs. 10%) is statistically different from the proportion of Americans to Non-American in domestic deals (95% vs. 5%).

The results for the other CEO characteristics in Panel A of Table 3 show significant differences in some of the other proportions within and across deal types. For example, compared to their counterparts, CEOs of U.S. firms conducting international deals are more likely to have graduate degrees but are almost just as likely to have a Business or Law degree. The results in Panel A of Table 3 also show that the CEO tenure is similar for cross-border and domestic M&As. When they conduct cross-border vs. domestic M&As, the CEO of U.S. companies are almost equally likely to have been in that position with the firm for less than five years. On the other hand, CEOs with prior cross-border experience are significantly more likely to undertake international deals.

3.5 Deal Characteristics

Table 3 Panel B demonstrates the summary and comparison of deal characteristics for international and domestic M&As. While only 20% of friendly deals are international, 80% are domestic. *Payment Method* differs significantly across cross-border and domestic sub-samples. Around 8% of stock deals, where 100% of the deal is financed with stock, are international while 17% of other deals (financed with cash and a mix of cash and stock) are domestic. The *Type of Agreement* is very similar for international deals compared to domestic ones. Around 18% (23%) of the time where there is (is no) public disclosure that a definitive agreement has been carried out by the bidder and target firms, the deal is international.

4. Empirical Models and Results

Our empirical approach is motivated by the model developed by Malmendier and Tate (2005) who investigate the effect of CEOs' overconfidence on their firms' investments. Similar to their model, wherein they compare the investment behavior of "overconfident" versus "nonoverconfident" CEOs (p. 2667), in our context, we compare the M&A activity and value creation of CEOs with an international background to those without such a background. We acknowledge that other CEO characteristics may affect the firm's M&A activity, but we are interested in the effect beyond that due to other CEO characteristics.

4.1 International Background and the Likelihood of Cross-Border Deals

To investigate our first research question of whether having a CEO with an international background is associated with an increased likelihood that the firm will conduct cross-border M&As, we estimate the following probit model:

$$\Pr\left(CB_{i,t} = 1 \middle| IB\right) = \beta IB_{i,t} + CEO\ Control_{i,t-1} + \eta_{i,t-1} + \alpha_{d,t} + \phi_t + \delta_i + \varepsilon_{i,t} \qquad (1)$$

The sample includes all domestic and cross-border acquisitions by U.S. firms over our sample period. The dependent variable $CB_{i,t}$ is one if in year t, firm i announces a cross-border acquisition, and zero, otherwise. $IB_{i,t}$ represents the *International Background* measures described in Section 3.2 and takes the value of one if the CEO of the firm i have the respective measure by the year of the deal. If CEOs with an international background (compared to those without that background) are more likely to acquire overseas targets, we expect the coefficient estimate on β to be positive and significant, and vice versa. $CEO\ Control_{i,t}$ represents *Tenure*, Age, *Business or Law,* and *CEO Previous CBMA,* and the firm controls, $\eta_{i,t-1}$, defined in the previous fiscal year, are *firm size*, *cash holding*, *capital intensity*, *leverage*, *ROA*, and *MTB*. Deal controls, $\alpha_{d,t}$, are discussed and defined in Section 3.3 and Appendix B. We include year-fixed effects, ϕ_t; and industry fixed effects, δ_i, defined at the 3-digit SIC level. Standard errors are clustered at the firm level.

We first estimate the model in equation (1) with each of the CEO's international background characteristics (*Non-American, Non-U.S. Education, Non-U.S. Employment*) separately as an independent variable and then with the indicator variable *IB3,* which is one if the CEO has all three international background characteristics and is zero otherwise.[12] We also provide marginal effects for each of the probit models. Table 4 reports the results of each of these models.

The results in Table 4 show that for all the models, the coefficient estimates on each of our international background measure is positive and highly significant, suggesting that firms are more likely to conduct cross-border M&As if their CEO has a nationality other than American, holds a degree from overseas, has foreign employment experience, or has all of these background characteristics. Under the coefficient estimates and in brackets, we report the magnitude of the likelihood for marginal effects after the probit models. The coefficient estimates indicate that compared to a CEO without any international background, the marginal probability of attempting a cross-border M&A is 5% higher if she has a non-American nationality, 4% higher if she studied overseas, 3% higher if she has overseas work experience and 11% higher if she has all three of the international background characteristics. The results confirm that firms are more likely to attempt cross-border M&As if the CEO has an international background. Additionally, the effect is more substantial as the international background characteristics increase to all three from only one.[13]

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[12] In untabulated results, we test for the pairwise correlation between the CEO international characteristics and find significant correlation between these variables. However, the variance inflation factor (VIF) is below 1.15 for all three measures, confirming that the model with all these variables is not affected by multicollinearity.

[13] In unreported results we find that, compared to having only one, when the firm has a CEO with at least two of the international background measures, there is a greater likelihood of the firm conducting cross-border acquisitions.

The results for the controls in Table 4 are consistent with prior studies. Tenure is negatively associated with the propensity of conducting an international deal, as suggested by Yim (2013). Moreover, larger firms are more likely to be involved in cross-border acquisitions due to resource availability and the capacity to take risks (Stiebale and Trax, 2011; Moeller, Schlingemann, and Stulz, 2004). In addition, *cash holding* is positively related to the likelihood of attempting cross-border mergers, while *leverage* is negatively related to the likelihood of attempting these deals (Hu and Yang, 2016; Harford, 1999).

4.2 Alternative Test for the Likelihood of Cross-Border Deals

To ensure that our results in the previous sub-section are not affected by the choice of model, following Bell, Fairbrother, and Jones (2019), we estimate a random-effect-within-between model (REWB). This model is shown to be superior to other models since it contains all the strengths of the fixed effects and random effects models, allowing for random slopes that permit the relation between variables to change across upper-level entities. Table 5 reports the results of a REWB model using equation (1). The coefficient estimates of the main indicator variables are larger and more significant than those in Table 4, confirming our main findings regarding the increased propensity of the firm to conduct cross-border deals when the CEO has an international background.

Together, the findings so far are in support of our first conjecture that compared to CEOs without an international background, CEOs with any level of international background are more likely to attempt cross-border M&A deals. As the breadth of the international background increases, the likelihood of attempting international deals also increases, i.e., having multiple dimensions of international background (as opposed to just one). As we discussed earlier, a potential reason for the increased likelihood of cross-border deals is the CEO's familiarity with international regions and cultures. When there are many target options around the world and research is costly, a CEO's familiarity with other countries may increase the firm's choice set. Additionally, a CEO with an international background may have an informational advantage in international investment opportunities as CEOs build networks through education, institutes, firms, and social groups, e.g., alumni associations.[14] These networks may increase information flow that could expand a CEO's horizon during the target evaluation and selection (Cohen, Frazzini, and Malloy, 2008; Wang and Yin, 2018).

If having an international background provides an informational advantage about international laws and reduces friction in cross-border deals (Giannetti, Liao, and Yu, 2015), then we expect these acquisitions to be value-enhancing. On the other hand, these deals would not add value if CEOs with international backgrounds overestimate the value of their experience and are overconfident when they attempt these deals (Chung, Green, and Schmidt, 2018). These two competing theories motivate our second research question, which we investigate in the next stage of our analysis.

4.3 International Background and Announcement Returns

To investigate whether markets react more positively to cross-border deals by firms having a CEO with an international background, we investigate the cumulative abnormal returns (CAR) to the acquirer on the announcement of the deal. We use the market-adjusted returns model to estimate the CAR over the three-day window (-1, 0, +1) surrounding the deal announcement, where day 0 is the announcement date in the SDC database. The proxy for the market is the value-weighted returns from CRSP.

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[14] Data for international social connections (memberships and affiliations) of CEOs is available in the BoardEx database. However, the start and end dates are not available and so we do not to use it to construct our international background variables.

4.3.1 Univariate Analysis of Announcement CARs

Table 6 reports a univariate analysis of the CARs to U.S. acquirers of international targets for the three-day announcement window. We report the CAR for the entire sample and sub-samples based on our international background measures. We also report the results of t-tests for whether the CAR in each sub-sample is significantly different from zero, and whether the CARs of the sub-samples are significantly different from each other.

The results in Table 6 confirm that when U.S. firms announce cross-border M&A deals, they realize positive and significant abnormal returns, ranging between 0.7% and 2.5%. The results for our international background measures allow us to see whether (a) each of our CEO's international background characteristics affects the announcement CAR similarly and (b) whether having all three characteristics matter. When we compare the CAR of firms based on whether the CEO has each of the international background characteristics, we find that compared to cross-border acquisitions conducted by CEOs who are American, when the CEO is not an American, the CAR is significantly higher, 0.7% versus 1.6%. The results for international education show that when the CEO has a degree from an overseas institution, the CAR is slightly higher, but the difference is not significant. Similarly, there is no difference between the CAR on the announcement of cross-border deals by CEOs who have worked overseas compared to the announcement CAR for those firms led by CEOs with no international work experience, each realizing an average CAR of 0.8%. Our results for *IB3* show that, compared to cross-border acquisitions announced by CEOs without any of the international background characteristics, when the CEO has all three international background measures, the firm realizes a three-day CAR that is 1.8% higher (0.7% versus 2.5%). The results in Table 6 provide preliminary evidence that when a U.S. firm's CEO has an international background, the firm realizes higher returns surrounding the announcement returns of cross-border deals.

4.3.2 Multivariate Analysis of Announcement CARs

To confirm whether the results in Table 6 hold in a multivariate setting, we estimate the following pooled OLS regression model of acquirer CAR in the three-day window surrounding the announcement date:

$$CAR_i = \alpha_1 + \alpha_2 IB_i + CEO\ Control_i + \eta_i + \alpha_d + \phi + \gamma_i + \delta_i + \varepsilon_i \quad (2)$$

CAR_i is the dependent variable defined as the cumulative abnormal return for firm *i* around the day of the deal announcement. Our variable of interest is IB_i, which represents each of the *International Background* characteristics, and *IB3.* The CEO, firm, and deal controls are as discussed in Section 3.3. We include year-fixed effects, ϕ, to control for time-varying common effects; firm-fixed effects, γ_i, to control for firm-specific characteristics; and industry-fixed effects, δ_i, defined at the 3-digit SIC level, to control for systematic differences in the tendency of firms across various industries to conduct mergers and acquisitions. To adjust for possible dependence in the residuals, following Petersen (2012), we cluster standard errors at the firm level.

Table 7 reports the results of the model in equation (2) for the sample of international deals only. The results are consistent with those reported in Table 6. When a non-American CEO conducts an international deal, the CAR is 3.5% higher. Firms with CEOs who have prior overseas education (work experience) realize 1.5% (1.1%) higher CARs around the announcement of cross-border deals. Furthermore, as seen in column (4), when a U.S. firm announces an international deal, if the CEO has all three of the *International Background* characteristics, then the bidder's abnormal return is 6.5% higher, and it is significant at the 1% level. Findings confirm that when a U.S. firm with a CEO who is not an American, who has a degree from an overseas institution, and who has worked overseas; investors react positively when the firm announces international M&A deals.[15]

Potential reasons for this positive reaction to deals announced by a CEO with an international background include investors' expectation of reduced friction in the negotiation and integration process, as well as better target selection. Shareholders may perceive CEOs with an international background as contributing to firms' cultural diversity and understanding and may therefore expect the merging and adaptation process will be smoother. In addition, investors may value the informational advantage of the CEO in the international arena. Our finding is consistent with that of Giannetti, Liao, and Yu (2015), who find that the "brain gain" effect of CEOs with diverse backgrounds and experiences gained via living in different countries bring distinct perspectives and unique knowledge to their C-suites. The results for the controls in Table 7 are largely in line with prior studies. For example, consistent with Lang, Stulz, and Walking (1989), the acquirer's market-to-book ratio is positively associated with the announcement returns, and similar to Ahern, Daminelli, and Fracassi (2015), we find that the target country's corporate tax rate and GDP per capita growth is negatively related to the bidder cumulative abnormal returns.

4.4 Do Other Characteristics Matter?

In the previous section, we find evidence that firms realize a significant increase in abnormal returns around cross-border M&A deals when the CEO conducting the deal has an international background. In this section, we further examine the channel of this value creation by investigating whether the association of the CEO's international background and the deal outcome is affected by other CEO and target characteristics.

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[15] In untabulated analysis, we estimate model (2) for buy and hold abnormal returns to examine the long term impact (one month, three months, and six months) of CEO international background, however, the impact on the announcement returns disappears in the long-run.

We provide results of a multivariate analysis of the impact of CEO characteristics in Table 8, based on the CEO's international background. To conserve space, in this and most of our subsequent tests, we report results for our strictest international background measure, *IB3*, i.e., when the CEO has all three background characteristics. We present the findings of the model in equation (2) at the whole sample level, with the *IB3* variable and interactions in Table 8. In column (1), we find that when a U.S. firm announces a cross-border deal, having a CEO with an international background is significant in creating value when the CEO does not have a business or law degree, but having an international background reduces the announcement CAR if the CEO has a business or law degree. Column (2) and (3) reports the coefficient estimates of the International CEO's interaction with the tenure dummy and continues tenure variable. Column (2) shows that when the CEO's tenure is greater than five years, having an international background reduces the announcement returns in cross-border deals, but when the CEO has an international background, the announcement CAR is positive if the CEO's tenure is less than five years. In column (3), we find that tenure and announcement returns are negatively related. In other words, when a U.S. firm announces a cross-border acquisition within the first four years of hiring a CEO with an international background, the announcement returns are higher than the announcement returns of similar deals within four years of hiring a CEO without this international background.

We further investigate the channel of the value creation we observe in Section 3.3.2 by estimating an OLS regression to understand the influence of the international background on main deal characteristics. *IB3* is the independent variable of interest, and payment method, deal value, and premium are the dependent variables. Specifically, we investigate the influence of a CEO with an international background on the percentage of stock offered in payment, the deal value, and the premium.

The results of this regression are reported in Table 9. The first column presents the results of regressing *IB3* on the percentage of stock offerings, and we find a significantly positive relation between the international CEOs and the likelihood to pay deals in stock. The majority of the targets in our sample are private, as suggested in the literature when private targets are paid with stocks, the market response significantly increases (i.e., Fuller, Netter, and Stegemoller, 2002). Column (2) suggests that International CEOs are conducting smaller deals and the coefficient is negative and significant at the 10% level. We do not have the premium for most of the deals in our sample as many of the international targets are private, and among the public firms, several target values are missing.[16] Column (3) presents the coefficient on *Premium,* which is negative and significant, meaning CEOs with international experience pay a lower premium in cross-border M&As. Evaluating private targets may be extremely complex as there is no set public value for them, however, international background assist CEOs in successfully evaluating and paying a lower premium, thus, bringing value to the acquisitions.

Together the findings in Table 9 suggest that the observed increased gains on the announcement of cross-border deals by firms with CEOs having an international background are mainly from paying lower acquisition premiums, paying increasingly with stock, and conducting smaller deals.

4.5 Target Selection and Deal Performance

In this sub-section, we investigate the market response to cross-border deals when the firm acquires targets in countries that the CEO is familiar with. In other words, we examine the announcement CAR when CEOs select the target from countries that feature in their international background, i.e., when they acquire targets in countries that they are nationals of, where they earned a degree, or where they have prior work experience. If familiarity bias is the primary reason that CEOs select firms headquartered in countries that feature in their international background measures, then shareholders should react negatively to the announcement of these deals. Conversely, if investors believe that CEOs will leverage their accumulated information from their background in these countries, they should react positively.

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[16] In the cross-border sample, among the 7,620 deals conducted, there are 3,074 private, 2,020 subsidiaries, and 326 are public targets. For this reason, we were only able find the market value of 400 targets to calculate the premium. We manually collect deal value when it is available in the synopsis in the SDC database. However, it is missing or erroneously recorded for many of the deals. Erel, Liao, and Weisbach (2012) also find that around 60% of their sample and 70% of the private targets are missing deal value.

We define an indicator variable, *Country Experience,* which takes a value of one for deals involving targets from a country where the CEO has citizenship, has earned a degree, or has work experience; and zero otherwise. When *Country Experience* is one, for ease of exposition, we designate the target country as one which the CEO is "familiar" with. We report a univariate analysis of CEOs' target selection based on their country experience in Table 10. In Panel A, we report results for the full sample of cross-border deals. Since background knowledge may be viewed differently for the first deal in a target country (see Dandapani, Hibbert, and Lawrence, 2020), in Panel B we report results separately for the first and later deals for those countries that feature in the CEO's background. The results in Panel A of Table 10 show that in 7% of the cross-border deals, CEOs choose targets from countries with which they are familiar. The mean announcement returns for the 3-day window is 0.8% when the CEO does not have experience in the target country; however, it is just about 0% when the target country features in the CEO's international background.[17] The t-test for the difference in CAR for each of these sub-samples confirms that the bidder announcement returns are significantly lower when CEOs choose targets in countries with which they are more familiar. Our results in Panel B of Table 10 show that when CEOs conduct their first deal in a familiar country, the CAR is negative, but when they conduct subsequent deals in these familiar countries, the announcement CAR is positive. However, the difference between the CARs for the first and subsequent deals based on the CEO's background in the target country is insignificant.

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[17] In untabulated tests, we find that CEOs that choose targets from a country with previous experience are generally younger and with shorter median tenure of three years.

We estimate an interaction variable analysis for the relation between the interaction of the CEO's international background and *Country Experience* indicator variable, and bidder announcement returns. Table 11 reports the results in column (1) for the deals where the *Country Experience* and *IB3* variables interact. The coefficients indicate that when the acquisition is in a country that features in the CEO's background, cross-border deals bring a lower market return. Column (2) presents the coefficients for the interaction of international background, country experience, and the order of the deals in familiar countries. We do not find a significant association between the interaction variables and the announcement returns.

As a final test of the country experience effect, we estimate the model in equation (2) after replacing the *IB3* variable with the *Country Experience* variable. We report results for the full cross-border deals sample in Table 12. The coefficient estimate on *Country Experience* is negative and significant, confirming the previous findings that when CEOs choose targets in countries that feature in their international background, the announcement returns decrease by 1%.

4.6 Placebo Test and Additional Robustness Tests

Since it is not possible to directly measure how an international background impacts a CEO's decision-making or skill set, there may be concerns that the relation we observe may be due to other unobserved factors or missing firm characteristics. In an attempt to rule out this endogeneity problem, we perform a placebo test. Following Bertrand and Schoar (2003), we create a manager-firm matched sample which includes the set of firms that conduct cross-border M&As,

for which we observe the CEO in at least one other firm over the sample period.[18] We regress a CEO's average residual from the OLS regression (eq.2) in her second firm on the average residual from the OLS regression (eq.2) in her first firm and report the findings in the real data column of Table 13. Our findings indicate a persistence in the CEO's unobservable characteristics as there is a positive and significant relation between a CEO's residual in her second job and her residual in her first job. Next, we create a placebo sample for the CEOs' "second firm" by using cross-border acquisitions announced by a CEO (without an international background) before the actual date that the CEO starts at the second firm. We then regress residuals from the announcement CAR of this placebo sample on the CEOs' actual residuals in their first firm and report these estimates in the placebo data column of Table 13. If the CARs were to change independently of the action of the international CEO, we would expect the positive CARs to precede the arrival of the international CEO. Unlike the coefficient estimates in the first column, the estimate in the placebo data column is close to zero and insignificant. In line with Bertrand and Schoar's (2003) argument, Table 13 confirms that the effect on cross-border CARs from having a CEO with an international background is persistent and the market reaction is more likely due to the CEO's international background than any missing firm characteristics or unobserved factors.

Another potential criticism of our findings is that due to the large representation of British and Canadian CEOs in our sample, the results we observe may be driven by these nationalities.[19] To address this concern, we drop deals conducted by CEOs from the U.K. and Canada from our sample and re-estimate our base probit and OLS models in equations (1) and (2). We report results for each of these restricted samples in Tables 14 and 15, respectively. Table 14 shows that the coefficient estimates on our international background measures in each of the probit and the marginal fixed effects after probit models all retain their sign and significance. For example, CEOs with all three international background characteristics in this restrictive sample are 10% more likely to conduct an international deal as opposed to the 11% higher likelihood in the full sample in Table 4.

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[18] We thank an anonymous reviewer for suggesting this approach.
[19] We thank an anonymous reviewer for suggesting the need to address this concern.

Table 15 reports the results of the OLS regression model and tests the reaction of investors to the deal announcements by international CEOs, excluding those from the U.K. and Canada. Our announcement returns results still hold in this restrictive sample. The international background coefficient estimates are larger in this case. U.S. firms realize 14.4% higher returns when the CEO has an international background that does not include British or Canadian nationality, as opposed to 6.5% higher returns in the full sample. The findings in Tables 14 and 15 confirm that the results are not driven by the over-representation of the U.K. and Canada in the backgrounds of CEOs within our sample. Regardless of their nationality, CEOs with an international background are more likely to conduct cross-border deals and they create significant value for U.S. firms at the announcement of those deals.

5. Conclusion

We evaluate the influence of the CEO's international background on a U.S. firm's cross-border M&A activity. We use three characteristics to capture the CEO's international background; if she has non-American nationality, earned a degree in a foreign country, or worked outside of the U.S. We construct a fourth measure that is meant to represent the combined effect of these characteristics. Our first finding is that, compared to those without, when a U.S. firm has a CEO with an international background, the firm is significantly more likely to conduct international deals. Our second finding is that the international deals announced by CEOs with international backgrounds are value-enhancing as firms realize a significantly positive market reaction in the three days surrounding the announcement of these deals. When we investigate the source of the value creation, we find that when the CEO has an international background, the acquisition premium is lower, the deal is smaller, and the transaction is financed mostly with stock.

Finally, we investigate whether our results matter if the CEO acquires targets in the specific countries that he is a national of, has studied in, or has worked in. We find that firms with CEOs having all three international background characteristics realize negative abnormal returns when the target is in a country the CEO is familiar with. This finding suggests that whereas investors value a CEO's international background in cross-border M&A deals, they discount the benefit of these characteristics when familiarity bias may be at play. Our findings are robust to alternate ways of measuring international background and survive a placebo test and other robustness checks.

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Appendix A: Domestic and Cross-Border Acquisitions by U.S. Firms from January 1980 to December 2018

	N	Cross-Border	Domestic
The initial sample of all domestic and cross-border mergers and acquisitions by U.S. firms in SDC Platinum between January 1980 and December 2018.	347,214	51,733	295,481
After deleting observations with missing PERMNO and GVKEY.	109,821		
After deleting observations missing/unable to identify Company ID for BoardEx merging.	73,188		
After deleting deals without a matched Director ID.	63,492		
After deleting deals without cumulative abnormal returns.	63,489	11,839	51,650
After deleting deals conducted before 1996.	56,645	10,823	45,822
After deleting observations for which the deal percent owned after the transaction is less than 50.	37,372	7,697	29,675
After deleting incomplete deals.	37,278	7,620	29,658

Appendix B: Variable Definitions

Panel A: CEO Background and Other Characteristics

Variable	Definition	Source
CEO Characteristics		
Non-American	= 1 if the CEO's nationality is not American; = 0 otherwise.	BoardEx & Manual
Non-U.S. Education	= 1 if the CEO has pursued a degree outside of the U.S. before starting her service; = 0 otherwise.	BoardEx
Non-U.S. Employment	=1 if the CEO has worked at a company that is headquartered outside of the U.S. before starting her service; = 0 otherwise.	BoardEx
IB3	=1 if the CEO's nationality is not American, the CEO has worked and pursued a degree outside of the U.S. before starting her service; = 0 otherwise.	
Graduate Degree	= 1 if the CEO has a graduate degree; = 0 otherwise.	BoardEx
Business or Law Degree	= 1 if the CEO has a degree in business or law fields; = 0 otherwise.	BoardEx
Tenure	The log of CEO tenure at the time of the deal.	BoardEx
Age	The age of the CEO at the time of the deal.	BoardEx
CEO Previous CBMA	=1 if the CEO has conducted a cross-border M&A in the past; = 0 otherwise.	Boardex & SDC
Country Experience	= 1 if the CEO has citizenship, degree, or employment experience in the target country; = 0 otherwise.	Boardex & SDC

Panel B: Other Variables

Variable	Definition	Source
Deal Characteristics		
Friendly Deal	= 1 if the attitude of the deal is identified as "Friendly" in SDC; = 0 otherwise.	SDC
Collar	= 1 if the equity swap consideration offered depends on an established range; = 0 otherwise.	SDC
Challenged Deal	= 1 if an outside firm instigated an offer for the target while there was a pending bid; = 0 otherwise.	SDC
Definitive Agreement	= 1 if there is public disclosure of a definitive agreement between the bidder and target firms; = 0 otherwise.	SDC
Stock	= 1 if 100% of the acquisition is financed with stock; = 0 otherwise.	SDC
Deal Value	Log of the value of the transaction in millions of USD.	SDC
Premium	The ratio of the transaction value to the market value of the target company four weeks prior to the announcement.	SDC & CRSP
Firm Characteristics		
Capital Intensity	Capital expenditure over book value of total assets.	Compustat
Leverage	The ratio obtained by dividing the total of current liabilities and long-term debt by the total assets.	Compustat
Cash Holding	The proportion of cash and short-term investments in relation to the total assets.	Compustat
ROA	Net Income over book value of total assets.	Compustat
Market-to-Book	The natural logarithm of the ratio between the market value and book value of a company's equity.	Compustat
Firm Size	Log of Total Assets.	Compustat
Firm Previous CBMA	= 1 if the firm has conducted a cross-border M&A prior to the time of the deal; = 0 otherwise.	SDC
Target Nation Characteristics		
Language	=1 if the primary language spoken in the target country is English; = 0 otherwise.	CIA country factbook
GDP Growth	The log of annual GDP (real) per capita growth rate for the target nation in the year of acquisition.	World Development Indicator
Corporate Tax Rate	The difference between the corporate tax rate percentage of the acquirer and target nations in the year of the acquisition.	Economic Freedom Index

Appendix C: Deal Frequency by Year

		SDC Sample			Our Sample		
Year	Frequency	Annual %	Cum. Frequency	Cum. %	Cum. Total	Annual %	Cum. %
1980	5	0.01	5	0.01			
1981	45	0.07	50	0.08			
1982	55	0.09	105	0.17			
1983	119	0.19	224	0.35			
1984	140	0.22	364	0.57			
1985	125	0.20	489	0.77			
1986	171	0.27	660	1.04			
1987	327	0.52	987	1.55			
1988	278	0.44	1,265	1.99			
1989	469	0.74	1,734	2.73			
1990	535	0.84	2,269	3.57			
1991	552	0.87	2,821	4.44			
1992	677	1.07	3,498	5.51			
1993	836	1.32	4,334	6.83			
1994	1,163	1.83	5,497	8.66			
1995	1,347	2.12	6,844	10.78			
1996	1,837	2.89	8,681	13.67	1,837	3.24	3.24
1997	2,225	3.50	10,906	17.18	4,062	3.93	7.17
1998	3,148	4.96	14,054	22.14	7,210	5.56	12.73
1999	3,005	4.73	17,059	26.87	10,215	5.30	18.03
2000	2,681	4.22	19,740	31.09	12,896	4.73	22.77
2001	2,118	3.34	21,858	34.43	15,014	3.74	26.51
2002	2,001	3.15	23,859	37.58	17,015	3.53	30.04
2003	2,175	3.43	26,034	41.01	19,190	3.84	33.88
2004	2,654	4.18	28,688	45.19	21,844	4.69	38.56
2005	2,890	4.55	31,578	49.74	24,734	5.10	43.66
2006	3,029	4.77	34,607	54.51	27,763	5.35	49.01
2007	3,242	5.11	37,849	59.62	31,005	5.72	54.74
2008	2,866	4.51	40,715	64.13	33,871	5.06	59.80
2009	1,782	2.81	42,497	66.94	35,653	3.15	62.94
2010	2,317	3.65	44,814	70.59	37,970	4.09	67.03
2011	2,706	4.26	47,520	74.85	40,676	4.78	71.81
2012	2,523	3.97	50,043	78.82	43,199	4.45	76.26
2013	2,315	3.65	52,358	82.47	45,514	4.09	80.35
2014	2,710	4.27	55,068	86.74	48,224	4.78	85.13
2015	2,512	3.96	57,580	90.69	50,736	4.43	89.57
2016	2,037	3.21	59,617	93.90	52,773	3.60	93.16
2017	1,995	3.14	61,612	97.04	54,768	3.52	96.69
2018	1,877	2.96	63,489	100.00	56,645	3.31	100.00

Table 1: Frequency of International M&As by Target Nations

Target Nation	N	%
U.K.	1,443	18.94
Canada	1069	14.03
Germany	691	9.07
France	404	5.30
Australia	390	5.12
Netherlands	263	3.45
Brazil	232	3.04
Italy	218	2.86
China	188	2.47
India	180	2.36
Israel	173	2.27
Spain	171	2.24
Switzerland	159	2.09
Mexico	146	1.92
Sweden	146	1.92
Ireland-Rep	127	1.67
Belgium	112	1.47
Japan	111	1.46
Denmark	108	1.42
Norway	85	1.12
Argentina	84	1.10
South Korea	77	1.01
Singapore	75	0.98
Taiwan	63	0.83
New Zealand	61	0.80
Hong Kong	56	0.73
Finland	55	0.72
Chile	48	0.63
South Africa	47	0.62
Poland	44	0.58
Czech Republic	43	0.56
Austria	38	0.50
Turkey	35	0.46
Russian Fed	34	0.45
Colombia	29	0.38
Portugal	29	0.38
Luxembourg	22	0.29
Thailand	22	0.29
Puerto Rico	20	0.26
Bermuda	19	0.25
Peru	18	0.24
Romania	18	0.24
Hungary	17	0.22
Malaysia	17	0.22
Egypt	16	0.21
Philippines	15	0.20
Indonesia	13	0.17
Venezuela	9	0.12
Bulgaria	8	0.10
Saudi Arabia	8	0.10
UAE	8	0.10
Vietnam	8	0.10
British Virgin	7	0.09
Costa Rica	7	0.09
Iceland	7	0.09
Uruguay	7	0.09
El Salvador	6	0.08
Cayman Islands	5	0.07
Ecuador	5	0.07
Guatemala	5	0.07
Morocco	5	0.07
Bahamas	4	0.05
Greece	4	0.05
Jersey	4	0.05
Paraguay	4	0.05
Bolivia	3	0.04
Ghana	3	0.04
Guernsey	3	0.04
Honduras	3	0.04
Jamaica	3	0.04
Lithuania	3	0.04
Malta	3	0.04
Monaco	3	0.04
Neth. Antilles	3	0.04
Pakistan	3	0.04
Panama	3	0.04
Serbia	3	0.04
Slovenia	3	0.04
Croatia	2	0.03
Estonia	2	0.03
Georgia	2	0.03
Isle of Man	2	0.03
Nigeria	2	0.03
Slovak Rep	2	0.03
Ukraine	2	0.03
Antigua	1	0.01
Armenia	1	0.01
Aruba	1	0.01
Azerbaijan	1	0.01
Barbados	1	0.01
Belarus	1	0.01
Belize	1	0.01
Benin	1	0.01
Bosnia	1	0.01
Cameroon	1	0.01
D.R. Congo	1	0.01
Gabon	1	0.01
Gibraltar	1	0.01
Grenadines	1	0.01
Kazakhstan	1	0.01
Kenya	1	0.01
Maldives	1	0.01
Mauritius	1	0.01
Multi-National	1	0.01
Myanmar	1	0.01
Qatar	1	0.01
St Lucia	1	0.01
Uganda	1	0.01
Yemen	1	0.01
Zimbabwe	1	0.01
Total	7,620	100.00

Table 2: Frequency of International M&As by CEO Nationality

Panel A: Full Sample of International Deals

Nationality	N	%
U.S.	6,827	89.6
Non-U.S.	793	10.4
Total	7,620	100.0

Panel B: Non-U.S. Nationalities

Nationality	N	%	Nationality	N	%
Canada	159	20.1	Spain	6	0.8
U.K.	138	17.4	Kenya	6	0.8
India	70	8.8	Austria	5	0.6
Australia	65	8.2	Hungary	5	0.6
Israel	33	4.2	Armenia	4	0.5
France	30	3.8	Lebanon	4	0.5
Switzerland	27	3.4	Belarus	3	0.4
Netherlands	26	3.3	Egypt	3	0.4
Italy	21	2.6	New Zealand	3	0.4
Germany	17	2.1	Bangladesh	2	0.3
China	16	2.0	Bermuda	2	0.3
Ireland	15	1.9	Japan	2	0.3
South Africa	15	1.9	Malaysia	2	0.3
Denmark	12	1.5	Middle East	2	0.3
Greece	12	1.5	Sri Lanka	2	0.3
Taiwan	12	1.5	Syria	2	0.3
Norway	11	1.4	Argentina	1	0.1
Cuba	8	1.0	Belgium	1	0.1
Korea	8	1.0	Bolivia	1	0.1
Pakistan	8	1.0	Finland	1	0.1
Turkey	8	1.0	Iraq	1	0.1
Colombia	7	0.9	Mexico	1	0.1
Iran	7	0.9	Tunisia	1	0.1
Russia	7	0.9	Zimbabwe	1	0.1

Table 3: Sample Breakdown of International and Domestic M&As by U.S. Firms

This table provides the sample breakdown for all cross-border and domestic M&A deals by U.S. companies from 1996 to 2018. Panel A compares the CEO characteristics and Panel B compares the deal characteristics. Appendix B provides details on the construction of each of the variables. Test statistics for differences of proportions are reported in the last column. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

Panel A: CEO Characteristics

	International (7,620)		Domestic (29,658)	
	N	%	N	%
Nationality				
American	6,827	24%	21,846	76%
Non-American	793	39%	1,254	61%
		[55.118***]		[59.042***]
Education				
U.S.	5,780	20%	23,343	80%
Non-U.S.	1,271	31%	2,795	69%
		[45.284***]		[98.671***]
Employment				
U.S.	5,441	18%	23,970	82%
Non-U.S.	2,157	28%	5,525	72%
		[35.228***]		[90.141***]
All International Characteristics				
Non-IB3	6,625	24.7%	20,192	75.3%
IB3	406	45.3%	490	54.7%
		[24.561***]		[88.690***]
Degree				
Graduate	5,079	22%	17,519	78%
Non-Graduate	1,972	19%	8,619	81%
		[33.808***]		[52.027***]
Educational Field				
Business or Law	4,112	22%	14,644	78%
Others	2,939	20%	11,494	80%
		[13.252***]		[19.261***]
Tenure				
5 and Less years	4,866	20%	19,494	80%
More than 5 years	2,754	21%	10,164	79%
		[23.555***]		[52.577***]
CEO Previous CBMA				
Previous Experience	5,657	37%	9,772	63%
No Experience	1,924	9%	19,567	91%
		[39.094***]		[-55.253***]

Table 3 cont.

Panel B: Deal Characteristics

	International (7,620)		Domestic (29,658)	
	N	%	N	%
Attitude				
Friendly	7,503	20.3%	29,426	79.7%
Others	91	44.0%	116	56.0%
		[59.322***]		[82.923***]
Payment Method				
Stock Deal	168	8.44%	1,823	91.56%
Others	1,846	16.87%	9,098	83.13%
		[-29.187***]		[-57.272***]
Agreement				
Definitive	3,322	17.6%	15,522	82.4%
Non-Definitive	4,298	23.3%	14,136	76.7%
		[-10.390***]		[6.881***]
Competition				
Challenged	45	28.7%	112	71.3%
Non-Challenged	7,575	20.4%	29,546	79.6%
		[-58.551***]		[-116.203***]

Table 4: CEO International Background and the Probability of Conducting International M&As

Panel A provides the results of the following probit model and Panel B presents marginal effects (MFX) after the probit model.

$$\Pr\left(CB_{i,t} = 1 \middle| IB\right) = \beta IB_{i,t} + CEO\ Control_{i,t-1} + \eta_{i,t-1} + \alpha_{d,t} + \phi_t + \delta_i + \varepsilon_{i,t}$$

$CB_{i,t}$ is one if a U.S. firm i announces a cross-border deal in year t and is zero otherwise. The variable of interest, *International Background* ($IB_{i,t}$), is one if the CEO of firm i has an international background. In columns (1)-(3), we provide results separately for when the CEO has each of the three international background characteristics, i.e., *Nationality, Education,* and *Employment.* Column (4) provides coefficients for when the CEO has all three international background characteristics *(IB3)*. We report the size effects (marginal fixed effects after probit) in brackets under standard errors. The CEO controls are *Tenure, Business or Law* degree, and *CEO Previous CBMA.* The Firm controls ($\eta_{i,t-1}$) are *Capital Intensity*, *Firm Size*, *Leverage, Cash Holdings*, *Return on Asset (ROA)*, and *Market to Book (MTB*). The Deal and Target Controls ($\alpha_{d,t}$) are *Friendly Deal* and *GDP Growth.* Appendix B provides details of each of the variables. We include year and 3-digit SIC industry fixed effects in each probit model. Standard errors are clustered at the firm level. Z-statistics are in parentheses below each estimate. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The sample contains all completed cross-border and domestic acquisitions by U.S. firms from January 1996 to December 2018.

Table 4

	Probit			
	(1)	(2)	(3)	(4)
Non-American	0.163***			
	(3.38)			
	[0.052***]			
Non-U.S. Education		0.159***		
		(4.03)		
		[0.044***]		
Non-U.S. Employment			0.100**	
			(2.29)	
			[0.027**]	
IB3				0.315***
				(4.35)
				[0.105***]
Business or Law	-0.014	0.001	-0.003	-0.011
	(-0.46)	(0.04)	(-0.09)	(-0.34)
Tenure	-0.061***	-0.051***	-0.055***	-0.064***
	(-3.91)	(-3.37)	(-3.59)	(-4.05)
Age	0.110	0.091	0.091	0.104
	(0.84)	(0.73)	(0.72)	(0.79)
CEO Previous CBMA	0.595***	0.766***	0.771***	0.594***
	(16.70)	(21.63)	(22.18)	(16.65)
Friendly Deal	-0.605***	-0.581***	-0.581***	-0.600***
	(-5.32)	(-5.23)	(-5.24)	(-5.30)
GDP Growth	0.090***	0.093***	0.093***	0.090***
	(9.35)	(9.51)	(9.49)	(9.39)
Firm Size	0.017	0.040***	0.036***	0.016
	(1.60)	(3.87)	(3.51)	(1.53)
Capital Intensity	-0.004	-0.202	-0.248	-0.002
	(-0.01)	(-0.64)	(-0.79)	(-0.00)
Leverage	-0.207**	-0.271***	-0.275***	-0.201**
	(-2.03)	(-2.78)	(-2.82)	(-1.99)
Cash Holding	0.241**	0.287***	0.288***	0.263**
	(2.20)	(2.67)	(2.70)	(2.39)
ROA	-0.027	0.042	0.049	-0.022
	(-0.32)	(0.61)	(0.71)	(-0.27)
MTB	-0.006	0.009	0.006	-0.009
	(-0.33)	(0.50)	(0.36)	(-0.50)
Constant	-0.879	-0.913	-0.887	-0.865
	(-1.47)	(-1.55)	(-1.51)	(-1.44)
N	22,814	26,808	26,691	22,724

Table 5: Random Effects Model for the Probability of Conducting International M&As

This table provides results of random effects probit models for the likelihood of U.S. public firms conducting cross-border acquisitions. Appendix B describes each of the explanatory variables. Z-statistics are in parentheses below each estimate. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The sample includes all completed cross-border and domestic acquisitions by U.S. firms from January 1996 to December 2018.

	Random Effects Probit Model			
	(1)	(2)	(3)	(4)
Non-American	0.241***			
	(4.76)			
Non-U.S. Education		0.161***		
		(4.24)		
Non-U.S. Employment			0.127***	
			(4.20)	
IB3				0.341***
				(4.83)
Business or Law	-0.001	0.001	-0.003	0.001
	(-0.03)	(0.04)	(-0.10)	(0.05)
Tenure	-0.054***	-0.055***	-0.057***	-0.056***
	(-3.86)	(-4.04)	(-4.16)	(-3.95)
Age	0.385***	0.320***	0.330***	0.382***
	(3.83)	(3.33)	(3.43)	(3.79)
CEO Previous CBMA	0.629***	0.790***	0.792***	0.631***
	(23.11)	(29.18)	(29.18)	(23.17)
Friendly Deal	-0.535***	-0.540***	-0.539***	-0.534***
	(-4.48)	(-4.59)	(-4.58)	(-4.46)
GDP Growth	0.049***	0.054***	0.054***	0.049***
	(9.39)	(10.39)	(10.47)	(9.39)
Firm Size	0.011	0.040***	0.037***	0.010
	(1.27)	(4.73)	(4.33)	(1.19)
Capital Intensity	0.237	0.140	0.110	0.242
	(0.80)	(0.53)	(0.41)	(0.81)
Leverage	-0.409***	-0.481***	-0.488***	-0.401***
	(-4.89)	(-6.00)	(-6.07)	(-4.79)
Cash Holding	0.420***	0.515***	0.531***	0.446***
	(4.54)	(5.81)	(5.99)	(4.83)
ROA	0.131	0.190**	0.199**	0.137
	(1.43)	(2.20)	(2.30)	(1.48)
MTB	0.011	0.037**	0.034**	0.007
	(0.65)	(2.23)	(2.05)	(0.40)
Constant	-2.192***	-2.401***	-2.421***	-2.170***
	(-5.30)	(-6.07)	(-6.10)	(-5.24)
Log Likelihood	-11767.22	-12216.33	-12175.69	-11727.42
N	23,312	27,618	27,495	23,221

Table 6: Univariate Analysis of CAR

This table provides summary statistics of the acquirer cumulative abnormal returns (CAR) measured over the three days (-1, 0, +1) surrounding the announcement date (day 0) in the SDC Platinum database. We present results of sub-samples for when the CEO has each of the three international background characteristics, i.e., *Nationality, Education, and Employment;* and for when the CEO has all three international background characteristics *(IB3)*. We provide the t-test of whether the mean CAR for each sub-sample is different from zero, and whether the CARs of the sub-samples are different from each other. *, **, and *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively.

	N	Mean	Std. Dev
Full Sample	7,510	0.008***	0.117
American CEOs-(a)	6,731	0.007***	0.079
Non-American CEOs-(b)	779	0.016	0.277
Comparison (a)-(b)		-0.009**	
CEOs with only U.S. degrees-(a)	5,703	0.007***	0.080
CEOs with international degrees-(b)	1,248	0.010	0.221
Comparison (a)-(b)		-0.003	
CEOs with only U.S. employment-(a)	5,371	0.008***	0.083
CEOs with International employment-(b)	2,117	0.008**	0.175
Comparison (a)-(b)		0.000	
CEOs without IB3-(a)	6,525	0.007***	0.078
CEOs with IB3-(b)	406	0.025	0.379
Comparison (a)-(b)		-0.018***	

Table 7: Acquirer Announcement Returns for International M&As

This table presents the results of the following pooled OLS regression model for international deals:

$$CAR_i = \alpha_1 + \alpha_2 IB_i + CEO\ Control_i + \eta_i + \alpha_d + \phi + \gamma_i + \delta_i + \varepsilon_i$$

CAR_i is the cumulative abnormal return for acquiring firm i around the day of the deal announcement. The CAR is measured over the three days (-1, 0, +1) surrounding the announcement date (day 0) in the SDC Platinum database. We provide results separately for when the CEO has each of the three international background characteristics, i.e., *Nationality, Education,* and *Employment;* and for when the CEO has all three international background characteristics *(IB3)*. CEO controls, firm controls (η_i), Deal and Target Controls (α_d) are included. All financial variables are winsorized at the 1% and 99% levels. All variable definitions are in Appendix B. We control for year (ϕ), firm (γ_i), and 3-digit SIC-level industry (δ_i) fixed effects. The standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed cross-border acquisitions by U.S. firms from January 1996 to December 2018.

Table 7

	CAR (-1, +1)			
	(1)	(2)	(3)	(4)
Non-American	0.035***			
	(2.94)			
Non-U.S. Education		0.015**		
		(2.46)		
Non-U.S. Employment			0.011**	
			(2.48)	
IB3				0.065***
				(2.65)
Business or Law	-0.005*	-0.005**	-0.006**	-0.004
	(-1.90)	(-2.22)	(-2.42)	(-1.27)
Tenure	-0.005**	-0.005**	-0.005***	-0.005***
	(-2.42)	(-2.50)	(-2.77)	(-2.61)
Age	0.027**	0.024**	0.021**	0.019*
	(2.35)	(2.25)	(2.06)	(1.92)
Language	-0.001	-0.001	-0.001	-0.000
	(-0.30)	(-0.25)	(-0.23)	(-0.13)
Country Experience	-0.015**	-0.013**	-0.013**	-0.016*
	(-2.00)	(-2.08)	(-2.12)	(-1.78)
Friendly Deal	0.006	0.007	0.006	0.006
	(0.53)	(0.62)	(0.61)	(0.55)
Definitive Agreement	0.004	0.004	0.004	0.004
	(0.65)	(0.65)	(0.64)	(0.73)
Collar	-0.065	-0.067	-0.068	-0.066
	(-0.85)	(-0.86)	(-0.87)	(-0.86)
Challenged Deal	-0.004	-0.005	-0.005	-0.005
	(-0.26)	(-0.30)	(-0.30)	(-0.34)
Corporate Tax Rate	-0.001	-0.001	-0.001	-0.001
	(-1.37)	(-1.40)	(-1.56)	(-1.48)
GDP Growth	-0.007	-0.007	-0.007	-0.007
	(-1.34)	(-1.33)	(-1.33)	(-1.31)
Firm Size	0.002	0.002	0.001	0.002
	(0.82)	(0.78)	(0.56)	(0.71)
Capital Intensity	0.072	0.097	0.083	0.050
	(0.93)	(1.02)	(0.85)	(0.67)
Leverage	-0.030*	-0.031	-0.029	-0.029
	(-1.66)	(-1.62)	(-1.58)	(-1.60)
Cash Holding	0.046***	0.049***	0.046***	0.048***
	(4.43)	(4.32)	(4.26)	(3.85)
ROA	-0.237**	-0.239**	-0.235**	-0.237**
	(-2.21)	(-2.22)	(-2.20)	(-2.22)
MTB	0.012***	0.012***	0.012**	0.011***
	(2.65)	(2.60)	(2.57)	(2.94)
Firm Previous CBMA	-0.002	-0.002	-0.002	-0.002

	(-0.61)	(-0.68)	(-0.52)	(-0.50)
Constant	-0.108*	-0.097*	-0.078	-0.074
	(-1.93)	(-1.81)	(-1.60)	(-1.63)
Adj. R-squared	-0.0918	-0.0938	-0.0939	-0.0884
N	4,762	4,762	4,747	4,747

Table 8: The Impact of International Background and CEO Characteristics on Acquirer Returns

This table reports OLS regression results for the association between international background and cumulative abnormal returns, conditional on Business or Law degree, and CEO tenure. The main predictor variable, *IB3*, is an indicator variable that takes the value of one if the CEO has all three international background characteristics (Non-American, Non-U.S. Education, Non-U.S. Employment), and zero otherwise. Column (2) reports the estimates for the interaction with the Business of Law degree. Columns (3) and (4) present the estimates of the interaction between international background and tenure dummy (which takes the value of 1 if tenure is less than five years, and zero otherwise) and tenure, respectively. All financial variables are winsorized at the 1% and 99% levels. The controls are the same as in Table 7 and are described in Appendix B. We control for year, firm, and industry (defined at the 3-digit SIC level) fixed effects. The standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 8

	CAR (-1, +1)		
	(1)	(2)	(3)
IB3	0.098***	0.076***	0.109***
	(5.57)	(5.49)	(6.50)
IB3 x Business or Law	-0.079***		
	(-2.96)		
IB3 x Tenure>5		-0.066***	
		(-3.10)	
IB3 x Tenure			-0.012***
			(-4.61)
Business or Law	0.001	-0.002	-0.002
	(0.21)	(-0.30)	(-0.30)
Tenure	-0.005	0.001	-0.000
	(-1.41)	(0.17)	(-0.14)
Age	0.020	0.012	0.019
	(0.82)	(0.54)	(0.81)
Language	-0.001	-0.001	-0.001
	(-0.19)	(-0.30)	(-0.30)
Country Experience	-0.017*	-0.014	-0.014
	(-1.77)	(-1.57)	(-1.60)
Friendly Deal	0.007	-0.003	-0.005
	(0.35)	(-0.14)	(-0.27)
Definitive Agreement	0.004	0.003	0.003
	(0.70)	(0.67)	(0.67)
Collar	-0.065	-0.051	-0.051
	(-1.04)	(-0.84)	(-0.85)
Challenged Deal	-0.004	-0.000	-0.000
	(-0.16)	(-0.02)	(-0.00)
Corporate Tax Rate	-0.001	-0.000	-0.000
	(-1.63)	(-1.40)	(-1.34)
GDP Growth	-0.007**	-0.007***	-0.007***
	(-2.45)	(-2.62)	(-2.64)
Firm Size	0.001	0.001	0.001
	(0.55)	(0.37)	(0.40)
Capital Intensity	0.040	-0.022	-0.024
	(0.34)	(-0.20)	(-0.22)
Leverage	-0.034	-0.026	-0.028
	(-1.46)	(-1.23)	(-1.29)
Cash Holding	0.051**	0.034	0.034
	(2.10)	(1.52)	(1.50)
ROA	-0.234***	-0.207***	-0.206***
	(-6.65)	(-6.38)	(-6.35)
MTB	0.011**	0.015***	0.015***
	(2.20)	(3.43)	(3.43)
Firm Previous CBMA	-0.002	-0.002	-0.001

	(-0.24)	(-0.27)	(-0.13)
Constant	-0.080	-0.041	-0.065
	(-0.79)	(-0.45)	(-0.70)
Adj. R-squared	-0.0662	-0.0067	-0.0040
N	4,747	5,216	5,216

Table 9: The Impact of International Background on Deal Characteristics

This table reports OLS regression results for the association between international background and deal characteristics. The main predictor variable, *IB3*, is an indicator variable that takes the value of one if the CEO has all three international background characteristics (Non-American, Non-U.S. Education, Non-U.S. Employment), and zero otherwise. Dependent variables in column (1) represent the percentage of stock offered; (2) log of deal value; and (3) premium calculated four weeks prior to announcement. All other variables are defined in Appendix B. All financial variables are winsorized at the 1% and 99% levels. We control for year, firm, and industry (defined at the 3-digit SIC level) fixed effects. The standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 9

	% of Stock Offered	Log (Deal Value)	Premium 4w
	(1)	(2)	(3)
IB3	5.750**	-0.390*	-196.926**
	(2.43)	(-1.79)	(-2.39)
Business or Law	6.838**	-0.058	38.632
	(2.47)	(-0.59)	(0.94)
Tenure	0.513**	-0.001	0.847
	(2.44)	(-0.08)	(0.27)
Age	8.488	-0.471	-106.102
	(1.20)	(-1.32)	(-1.09)
Language	-0.511	-0.066	-59.749
	(-0.17)	(-0.90)	(-1.32)
Country Experience	11.214*	0.343**	32.510
	(1.94)	(2.56)	(1.47)
Friendly Deal	-16.939	0.005	104.890**
	(-1.17)	(0.02)	(2.32)
Definitive Agreement	6.612***	1.147***	-56.078
	(3.61)	(15.87)	(-1.08)
Collar	51.979***	0.732	89.723
	(2.96)	(1.14)	(1.65)
Challenged Deal	10.375	1.579***	17.690
	(1.42)	(5.94)	(0.42)
Corporate Tax Rate	0.042	0.019***	4.634**
	(0.25)	(3.52)	(2.27)
GDP Growth	-1.538*	-0.053***	2.838
	(-1.70)	(-4.06)	(0.24)
Firm Size	-1.483**	0.435***	-3.460
	(-2.30)	(11.70)	(-0.16)
Capital Intensity	97.238***	-1.215	839.144**
	(3.32)	(-0.78)	(2.39)
Leverage	-27.593**	0.544	268.958**
	(-2.38)	(1.59)	(2.39)
Cash Holding	-14.456**	-0.181	-118.158
	(-2.37)	(-0.58)	(-1.59)
ROA	-33.723***	-0.035	-218.696
	(-3.35)	(-0.11)	(-1.39)
MTB	3.827**	0.111*	13.688
	(2.27)	(1.77)	(0.50)
Firm Previous CBMA	-1.909	-0.139	-81.610*
	(-1.01)	(-1.40)	(-2.06)
Constant	6.839	1.718	392.196
	(0.21)	(1.18)	(1.19)
Adj. R-squared	0.3847	0.4252	2.4808
N	909	2,701	62

Table 10: Univariate Analysis of CARs for CEO Target Selection

Panel A compares the three-day announcement CARs for sub-samples of cross-border deals by U.S. firms based on the CEO's *Country Experience,* which equals one if the CEO has nationality, degree, and employment experience in the target country by the start of the CEO's term at that firm. Panel B provides results for the subsample of the country experience deals based on whether the deal is the first cross-border acquisition announced by the CEO for that firm. In each panel, we provide results of a t-test of whether the CAR for each sub-sample is different from zero, and whether the CARs of the sub-samples are different from each other. *, **, and *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively.

Panel A: Full Sample

	CAR (-1, +1)		
	N	Mean	Std. Dev
Country Experience-(a)	464	0.000	0.078
No Country Experience-(b)	6,445	0.008***	0.121
Comparison (a)-(b)		-0.008**	

Panel B: Country Experience Deals Only

	CAR (-1, +1)		
	N	Mean	Std. Dev
CEO's 1st deal-(a)	145	-0.006	0.096
CEO's later deal-(b)	319	0.002	0.068
Comparison (a)-(b)		-0.008	

Table 11: The Impact of International Background and Country Experience on Acquirer Returns

This table reports OLS regression results for the association between international background and cumulative abnormal returns, conditional on Country Experience and the other of the deal. The dependent variable is the cumulative abnormal returns in the three-days around the deal announcement. The main predictor variable, *IB3*, is an indicator variable that takes the value of one if the CEO has all three international background characteristics (Non-American, Non-U.S. Education, Non-U.S. Employment), and zero otherwise. *Country Experience* takes the value of one if the CEO has citizenship, degree, or employment experience in the target country by the time of the CEO's tenure at that firm. Column (1) reports the estimates for the interaction with *Country Experience*. Column (2) present the coefficients of the interaction between international background, country experience, and later deals. *Later Deal* equals one when the acquisition is not the first one conducted in the country where CEO has citizenship, degree, or work experience, and it is zero if it is the first deal in that country. All financial variables are winsorized at the 1% and 99% levels. We control for year, firm, and industry (defined at the 3-digit SIC level) fixed effects. The standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 11

	CAR (-1, +1)	
	(1)	(2)
IB3	0.081***	0.077***
	(5.20)	(5.08)
IB3 # Country Experience	-0.049*	
	(-1.95)	
IB3 # Country Experience # Later Deal		-0.042
		(-1.51)
Later Deal		0.030
		(1.38)
Country Experience	-0.006	-0.003
	(-0.58)	(-0.24)
Business or Law	-0.005	-0.005
	(-0.71)	(-0.71)
Tenure	-0.006	-0.006
	(-1.59)	(-1.63)
Age	0.022	0.020
	(0.80)	(0.74)
Language	-0.002	-0.001
	(-0.31)	(-0.28)
Friendly Deal	0.005	0.006
	(0.27)	(0.28)
Definitive Agreement	0.005	0.004
	(0.82)	(0.80)
Collar	-0.044	-0.045
	(-0.70)	(-0.71)
Challenged Deal	-0.000	0.000
	(-0.01)	(0.00)
Corporate Tax Rate	-0.001	-0.001
	(-1.60)	(-1.60)
GDP Growth	-0.008***	-0.008***
	(-2.72)	(-2.73)
Firm Size	0.001	0.001
	(0.26)	(0.32)
Capital Intensity	0.010	0.003
	(0.07)	(0.03)
Leverage	-0.023	-0.024
	(-0.93)	(-0.97)
Cash Holding	0.051**	0.052**
	(2.02)	(2.03)
ROA	-0.247***	-0.248***
	(-6.78)	(-6.80)
MTB	0.012**	0.012**
	(2.38)	(2.37)
Firm Previous CBMA	-0.002	-0.003

	(-0.22)	(-0.42)
Constant	-0.075	-0.098
	(-0.68)	(-0.88)
Adj. R-squared	-0.0741	-0.0745
N	4,727	4,727

Table 12: The Effect of CEO Country Experience on Deal Performance

This table presents the results of the OLS regression model (2) in the text where the dependent variable is the cumulative abnormal returns in the three-days around the deal announcement. The variable of interest is *Country Experience,* an indicator variable that equals one if the CEO has citizenship, degree, and employment experience in the target country by the time of the deal announcement. All variable definitions are in Appendix B. All financial variables are winsorized at the 1% and 99% levels. We control for year, firm, and industry (defined at the 3-digit SIC level) fixed effects. The standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed cross-border acquisitions by U.S. firms from January 1996 to December 2018.

Table 12

	CAR (-1, +1)
Country Experience	-0.010**
	(-2.08)
Business or Law	-0.006**
	(-2.55)
Tenure	-0.005**
	(-2.57)
Age	0.024**
	(2.20)
English Speaking	-0.001
	(-0.35)
Friendly Deal	0.006
	(0.61)
Definitive Agreement	0.004
	(0.63)
Collar	-0.067
	(-0.86)
Challenged Deal	-0.006
	(-0.35)
Corporate Tax Rate	-0.001
	(-1.40)
GDP Growth	-0.007
	(-1.34)
Firm Size	0.002
	(0.75)
Capital Intensity	0.096
	(1.02)
Leverage	-0.031*
	(-1.69)
Cash Holding	0.049***
	(4.50)
ROA	-0.238**
	(-2.21)
MTB	0.013**
	(2.53)
Firm Previous CBMA	-0.002
	(-0.65)
Constant	-0.094*
	(-1.73)
Adjusted R-squared	-0.0944
N	4,762

Table 13: Placebo Test of Acquirer Announcement Returns

In this table, we compare the results of the announcement CARs using real data to the results using a placebo sample. We construct a manager-firm matched sample similar to Bertrand and Schoar (2003). The sample includes the set of U.S. firms that conduct cross-border M&As during our sample period for which the CEO is the CEO in at least one other firm over the sample period.
We estimate the following OLS regression model (2):

$$CAR_i = \alpha_1 + \alpha_2 IB_i + CEO\ Control_i + \eta_i + \alpha_d + \phi + \gamma_i + \delta_i + \varepsilon_i$$

CAR_i is the cumulative abnormal return for acquiring firm i around the day of the deal announcement. The CAR is measured over the three days (-1, 0, +1) surrounding the announcement date (day 0) in the SDC Platinum database. We regress model (2) for a CEO's average residual in his second firm on the average residual from model (2) in the first firm. In the *Real data* column, we use residuals from model (2) after the actual date that the CEO joins the second firm. In the *Placebo data* column, we use residuals from the actual cross-border acquisitions of the CEO's first firm but for the second firm, we use residuals from model (2) for acquisitions conducted by a CEO prior to the actual CEO joining the second firm, i.e., residuals from CARs of CEOs without any of the international background characteristics. Standard errors and R-squared are in parentheses and brackets, respectively, below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample period is from January 1996 to December 2018.

	Real data	Placebo data
CARs	0.230***	0.094
	(0.060)	(0.177)
	[0.074]	[0.005]
N	185	57

Table 14: Propensity Model without the British and the Canadian CEOs

This table presents the probit regression model results without CEOs from the U.K. and Canada. Explanatory variables are as in Table 4 and are described in Appendix B. For each of the main predictor variables, the top cell reports the coefficient estimates, Z-statistics are in parentheses, and the marginal effects after the probit models are in brackets. We control for year and industry (defined at the 3-digit level) fixed effects and the standard errors are clustered at the firm level. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The sample contains all completed cross-border and domestic acquisitions by U.S. firms from January 1996 to December 2018.

Table 14

	Probit			
	(1)	(2)	(3)	(4)
Non-American	0.129** (2.28) [0.040**]			
Non-U.S. Education		0.134*** (3.22) [0.036***]		
Non-U.S. Employment			0.081* (1.77) [0.021*]	
IB3				0.303*** (3.36) [0.100***]
Business or Law	-0.012 (-0.38)	0.004 (0.14)	0.001 (0.04)	-0.010 (-0.31)
Tenure	-0.062*** (-3.92)	-0.052*** (-3.40)	-0.055*** (-3.60)	-0.065*** (-4.03)
Age	0.097 (0.72)	0.089 (0.69)	0.092 (0.70)	0.095 (0.70)
CEO Previous CBMA	0.595*** (16.51)	0.767*** (21.45)	0.770*** (21.86)	0.594*** (16.47)
Friendly Deal	-0.593*** (-5.16)	-0.569*** (-5.06)	-0.569*** (-5.07)	-0.588*** (-5.13)
GDP Growth	0.087*** (8.92)	0.090*** (9.04)	0.091*** (9.03)	0.088*** (8.96)
Firm Size	0.021* (1.93)	0.044*** (4.17)	0.041*** (3.87)	0.021* (1.91)
Capital Intensity	0.036 (0.10)	-0.167 (-0.53)	-0.209 (-0.66)	0.048 (0.13)
Leverage	-0.213** (-2.07)	-0.277*** (-2.82)	-0.279*** (-2.84)	-0.211** (-2.06)
Cash Holding	0.257** (2.30)	0.301*** (2.76)	0.304*** (2.83)	0.272** (2.43)
ROA	-0.023 (-0.26)	0.054 (0.76)	0.062 (0.87)	-0.015 (-0.17)
MTB	-0.010 (-0.55)	0.005 (0.26)	0.002 (0.12)	-0.014 (-0.72)
Constant	-0.843 (-1.37)	-0.919 (-1.53)	-0.908 (-1.51)	-0.842 (-1.37)
N	22,308	26,302	26,185	22,218

Table 15: Acquirer Announcement Returns for International M&As without the British and the Canadian CEOs

This table presents the results of the OLS regression models in Table 7 without CEOs from the U.K or Canada. In columns (1)-(3), we provide results separately for when the CEO has each of the three international background characteristics, i.e., *Nationality, Education,* and *Employment.* Column (4) provide coefficients for when the CEO has all three international background characteristics *(IB3)*. We report the size effects (marginal fixed effects after probit) in brackets under standard errors. All variable definitions are in Appendix B. All financial variables are winsorized at the 1% and 99% levels. We control for year, firm, and industry (defined at the 3-digit SIC level) fixed effects. The standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed cross-border acquisitions by U.S. firms from January 1996 to December 2018.

Table 15

	CAR (-1, +1)			
	(1)	(2)	(3)	(4)
Non-American	0.061***			
	(3.04)			
Non-U.S. Education		0.021**		
		(2.46)		
Non-U.S. Employment			0.012**	
			(2.43)	
IB3				0.144**
				(2.16)
Business or Law	-0.006**	-0.007***	-0.008***	-0.005
	(-2.19)	(-2.81)	(-2.91)	(-1.57)
Tenure	-0.005**	-0.005**	-0.005***	-0.005***
	(-2.36)	(-2.44)	(-2.77)	(-2.81)
Age	0.026*	0.022*	0.019	0.016
	(1.82)	(1.68)	(1.60)	(1.52)
Language	0.000	0.000	0.000	0.001
	(0.01)	(0.19)	(0.08)	(0.51)
Country Experience	-0.016**	-0.016**	-0.016**	-0.019*
	(-2.18)	(-2.18)	(-2.14)	(-1.88)
Friendly Deal	0.006	0.007	0.006	0.007
	(0.51)	(0.59)	(0.56)	(0.56)
Definitive Agreement	0.003	0.003	0.003	0.004
	(0.56)	(0.56)	(0.54)	(0.63)
Collar	-0.068	-0.072	-0.072	-0.069
	(-0.86)	(-0.87)	(-0.88)	(-0.86)
Challenged Deal	-0.005	-0.004	-0.005	-0.005
	(-0.32)	(-0.28)	(-0.29)	(-0.34)
Corporate Tax Rate	-0.001	-0.001	-0.001	-0.001
	(-1.26)	(-1.30)	(-1.46)	(-1.37)
GDP Growth	-0.007	-0.007	-0.007	-0.007
	(-1.37)	(-1.36)	(-1.37)	(-1.33)
Firm Size	0.002	0.002	0.002	0.002
	(0.98)	(0.92)	(0.67)	(0.83)
Capital Intensity	0.105	0.142	0.122	0.076
	(1.30)	(1.30)	(1.13)	(1.12)
Leverage	-0.033*	-0.035*	-0.033*	-0.029
	(-1.66)	(-1.66)	(-1.67)	(-1.52)
Cash Holding	0.045***	0.052***	0.049***	0.044***
	(4.34)	(4.35)	(4.31)	(4.13)
ROA	-0.259**	-0.262**	-0.257**	-0.258**
	(-2.22)	(-2.23)	(-2.21)	(-2.23)
MTB	0.013**	0.014**	0.014**	0.012***
	(2.52)	(2.51)	(2.48)	(3.04)
Firm Previous CBMA	-0.002	-0.002	-0.002	-0.000
	(-0.64)	(-0.69)	(-0.46)	(-0.09)
Constant	-0.110	-0.093	-0.074	-0.068
	(-1.55)	(-1.38)	(-1.24)	(-1.42)

Adj. R-squared	-0.0921	-0.0959	-0.0965	-0.0822
N	4,565	4,565	4,550	4,550

Chapter 2: CEO Cultural Legacy and Corporate Investment Efficiency

1. Introduction

Corporate investment decisions are pivotal to the growth and performance of firms. The finance literature provides various explanations for why firms do not invest efficiently. A critical determinant of these decisions is the unique characteristics of the individuals who lead the firm, particularly the Chief Executive Officer (CEO). Over the years, academic research has delved into the role of CEO characteristics in shaping firms' investment decisions, focusing on aspects such as overconfidence, age, and tenure (Malmendier and Tate, 2005; Serfling, 2014). However, cultural legacy, which determines values and forms perceptions that influence everyday actions more than the personal interests of individuals within the same society (Mill, 1956), has received limited attention in the literature. Hofstede's cultural dimensions theory (Hofstede, 1980)[20] has been widely used to explain the impact of culture on capital structure (Li, Griffin, Yue, and Zhao, 2013), financing (Malul and Shoham, 2008), cash management (Bae, Chang, and Kang, 2012), and M&A outcomes (Chakrabarti, Gupta-Mukherjee, and Jayaraman, 2009). In this paper, I investigate the association between CEO cultural legacy, as measured through their nationality and linked to Hofstede dimensions, and investment efficiency.

Culture represents a legacy inherited from ancestors, internalized within individuals, and passed down to children from their parents. Shared cultural identities play a crucial role in connecting people, enabling them to have common experiences and social habits, and ultimately leading them to think and act similarly under specific circumstances and life events. According to Hofstede, Hofstede, and Minkov 2010, cultures with high individualism emphasize personal freedom and self-interest, while those with high masculinity prioritize individual achievement and success. Societies with high indulgence tend to value the pursuit of pleasure and the gratification of desires, whereas those with high power distance accept and expect an unequal distribution of power within society. Moreover, cultures that score high on uncertainty avoidance strive to avoid ambiguity and uncertainty, and those with high long-term orientation emphasize persistence and a focus on long-term gains. Previous studies often link individualist and masculine cultures to overconfidence and risk-taking, whereas they associate uncertainty-avoiding and long-term oriented cultures with risk-avoidance (Breuer, Riesener, Salzmann, 2014; Jong and Semenov, 2002; Chang and Noorbakhsh, 2009). These associations suggest that the cultural dimensions play a significant role in shaping individuals' attitudes and approaches to risk, decision-making, and financial management, which in turn can influence the investment efficiency of firms led by CEOs with different cultural legacies.

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[20] Hofstede's cultural dimensions theory (Hofstede, 1980) provides a robust framework to analyze characteristics across members of different nations.

Building on the methodology employed by prior research in calculating investment efficiency (e.g., Biddle, Hilary, and Verdi, 2009; Rajkovic, 2020), this study conducts an empirical investigation of the role of CEO cultural characteristics in U.S. firms between 1995 and 2018. The findings demonstrate that CEOs hailing from cultures characterized by high uncertainty avoidance and long-term orientation exhibit a positive association with investment efficiency, while those from cultures marked by high individualism, masculinity, indulgence, and power distance display a negative association. Furthermore, the results indicate that CEOs from uncertainty-averse and long-term-oriented cultures are less prone to overinvesting, whereas CEOs from high individualism, masculinity, indulgence, and power distance cultures exhibit a greater tendency to overinvest. This pattern holds when using the cost of debt as a proxy for CEO risk perception. Additionally, the study finds that the impact of risk-taking measures is more pronounced when external monitoring—measured by the presence of institutional investors and analysts—is weaker.

These results remain robust across alternative definitions of investments and CEO risk perceptions, subsamples involving only non-U.S. nationals, and a placebo test designed to mitigate concerns related to endogeneity.

This paper presents compelling evidence of the influence of CEO cultural legacy on corporate investment policies, making several significant contributions to the literature. Firstly, it adds to two branches of literature: CEO characteristics and investment efficiency. While earlier research has explored the role of culture across countries or at the firm level, this study is the first to establish a direct connection between CEO-level cultural influences and the efficient allocation of corporate capital. Secondly, this research addresses the challenge of empirically identifying the impact of culture on preferences. Although prior studies have uncovered a strong relationship between national culture and investment policies (Guiso, Sapienza, and Zingales, 2009; Zhang, Zhang, and Zhang, 2016), disentangling the influence of cultural legacy from other unobserved effects, such as economic, legal, and institutional factors across countries, has proven difficult. By focusing on the investment decisions of CEOs in U.S. firms, this study effectively controls for these factors, enabling a more accurate assessment of the impact of CEO cultural legacy on individual investment decisions. Finally, this study is the first one to use a comprehensive measure of culture, and link culture to immediate individuals[21], and consequently contributes to the growing body of literature that explores the influence of CEO attributes on firm outcomes by specifically evaluating the root causes of CEO behaviors.

The rest of the paper is structured as follows: in Section 2, a review of the literature and development of hypotheses are presented; Section 3 outlines the research methodology; Section 4 provides information on the data and sample used; Section 5 presents the empirical results; and finally, concluding remarks are given in Section 6.

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[21] Pan, Siegel, and Wang (2020) explore the concept of cultural inheritance and propose that CEOs with a tendency to avoid uncertainty are less likely to engage in acquisitions. However, their study connects this behavior to the origin of CEOs' last names rather than CEOs direct nationalities.

2. Literature Review and Hypotheses

This paper contributes to two streams of literature by exploring the intersection of investment efficiency and CEO characteristics, specifically focusing on the influence of a CEO's cultural background on a firm's investment strategy. Ideally, firms should operate at the optimal investment level, achieving investment efficiency by undertaking capital projects until the marginal benefit exceeds the marginal cost. Nonetheless, prior research indicates that companies frequently stray from the ideal investment level by either over or under-investing, and several justifications implicate the CEO.

For example, CEO behaviors such as engaging in self-serving and empire-building projects (Jensen, 1986), perquisite expenditures (Jensen and Meckling, 1976), and entrenchment (Berger, Ofek, and Yermack, 1997) can result in overinvestment. Conversely, CEOs may underinvest by forgoing valuable long-term investment opportunities in favor of current shareholders' wealth (Myers and Majluf, 1984). Building on the literature that examines managerial characteristics and behavior impacting corporate decision-making, this paper investigates the role of CEO culture through the lens of overconfidence and risk-taking.

2.1 CEO Characteristics and Behaviors

Extensive literature has provided evidence of how CEO characteristics influence firm capital allocations. For example, gender differences, which are associated with risk-taking, can impact corporate decision-making. According to Faccio, Marchica, and Mura (2016), firms with female CEOs are inclined towards lower leverage and better survival rates owing to their tendency to avoid risks. However, these companies appear to allocate capital with less efficiency. Similarly, Zeng and Wang (2015) find that female CEOs invest more efficiently because they hold more cash due to heightened conservatism, thus mitigating the over-investment problem caused by free cash flow.

Another area of research concentrates on the role of CEO overconfidence in corporate investment decisions. Overconfidence is often connected to risk-loving behavior, where decision outcomes are perceived more optimistically. Pikulina, Renneboog, and Tobler (2017) have associated high levels of overconfidence with excessive investment activities. According to the M&A literature, CEOs who exhibit overconfidence tend to overvalue their capabilities to generate returns, leading to the payment of inflated premiums (e.g., Malmendier & Tate, 2008). Ho, Huang, Lin, and Yen (2016) reported that overconfident CEOs managing banks are more likely to increase leverage and are more prone to failure during financial crises due to their risk-loving attitudes. Additional studies have found that CEO career background (Custodio and Metzger, 2014), age (Li, Low, and Makhija, 2017), narcissism (Aktas, Bodt, Bollaert, and Roll, 2016), and networks (El-khatib, Fogel, and Jandik, 2015) also play a role in capital allocation strategies. Pan, Siegel, and Wang (2020) conducted the most closely related study in this line of research, focusing on the impact of culture on acquisitions and capital expenditures. However, CEO cultural legacy has never been directly linked to investment efficiency, a gap this study aims to fill.

2.2 Cultural Legacy and Investment Decisions

In this section, I explore how cultural legacy and traits developed during early life stages can influence risk-taking behaviors throughout adulthood (Malmendier, and Nagel, 2011). Hofstede (1983) defines culture as the "collective programming" of individuals' subconscious minds, shaping specific values that give rise to shared behaviors and perspectives. I investigate the impact of personal characteristics stemming from inherited cultures, focusing on the extent to which behaviors shaped by cultural influences can help explain attitudes toward risk-taking in corporate financial investments. I employ the six cultural dimensions developed by Hofstede (2001)—uncertainty avoidance, long-term orientation, individualism, masculinity, indulgence, and power distance—which have been linked to consumption patterns, reliability, advertising stimuli, overconfidence, and self-attribution in prior literature. Building on this foundation, I examine the relationship between these cultural dimensions and risk-taking propensities, and how they may ultimately influence investment decisions. By doing so, I aim to enhance the understanding of the intricate connections between cultural legacy and corporate investment behavior.

2.2.1 Uncertainty Avoidance and Long-Term Orientation

The level of discomfort experienced by individuals in a society when confronted with vague, uncertain, or unfamiliar circumstances is known as uncertainty avoidance. In the context of M&As, which inherently involve multiple phases of ambiguity, Pan, Siegel, and Wang (2020) propose that CEOs with higher uncertainty avoidance are less inclined to pursue acquisitions. Li, Griffin, Yue, and Zhao (2013) discover that higher uncertainty avoidance corresponds to lower risk-taking among members of that culture. Furthermore, firms within such cultures are less likely to make dividend payments, as initiating them creates an expectation of continued payouts (Fidrmuc, and Jacob, 2010). Managers from uncertainty-averse societies also tend to hold more cash as a precaution against uncertain situations that might jeopardize their firms' financial stability (Ramirez and Tadasse, 2009; Chang and Noorbakhsh, 2009).

As a result, it can be argued that CEOs from cultures with higher uncertainty avoidance scores will adopt more conservative approaches in their corporate decisions. This inherent aversion to risk may lead CEOs to avoid pursuing risky projects. As a result, CEOs hailing from cultures that are averse to uncertainty may exhibit a greater tendency to make efficient investments, prioritizing projects with higher net present value and greater chances of success.

H1: CEOs from higher uncertainty-averse cultures are less likely to overinvest.

Cultures with a long-term orientation emphasize virtues centered on future rewards. Individuals with this cultural characteristic value perseverance and patience, utilizing resources judiciously and without waste. They work towards securing strong positions rather than pursuing immediate gains. Consequently, corporate managers from these cultures are likely to prioritize long-term profits, while managers from short-term-oriented cultures may chase annual profits (Hofstede, Van Deusen, Mueller, Charles, 2002).

Research indicates that firms within cultures with high long-term orientation scores engage in fewer acquisitions, take fewer risks, and demonstrate greater cost efficiency in their investments (Nguyen, Hagendorff, Eshragi, 2018). Supporting this finding, Chang and Noorbakhsh (2009) observe that companies maintain larger cash reserves and liquid assets in the absence of constant pressure to generate short-term returns. High long-term oriented cultures lead to a reduced propensity for dividend payouts (Bae, Chang, Kang, 2012). When CEOs originate from these types of cultures, they exhibit this behavior regardless of their firms' locations. Consequently, such CEOs tend to save for future projects with a high likelihood of success and invest in building their reputations as reliable managers.

H2: CEOs from long-term-oriented cultures are less likely to overinvest.

2.2.2 Individualism, Masculinity, Indulgence, and Power Distance

Individualism characterizes societies with loose social ties, where people prioritize themselves and their immediate families rather than being integrated into strong communities that protect the whole society. In cultures with high individualism scores, individual freedom, self-interest, and achievements are emphasized. Consequently, studies often associate individualism with overconfidence, self-attribution bias, and overoptimism, suggesting a significant positive effect on financial risk-taking (Breuer, Riesener, Salzmann, 2014). Strong overconfidence can result in excessive investment levels (Pikulina, Renneboog, and Tobler, 2017) and momentum strategy profits (Chui, Titman, and Wei, 2008). Overconfidence also leads to higher dividend payouts, optimistically assuming that the firm's condition would allow for the continuation of these payments (Fidrmuc and Jacob, 2010).

Examining the role of culture, Li, Griffin, Yue, and Zhao (2013) find that individualism influences earnings management in the context of corporate risk-taking. Similarly, Nguyen, Hagendorff, and Eshragi (2018) demonstrate that banks led by CEOs from less individualistic cultures undertake fewer and more cautious acquisitions. Thus, it is predicted that individualistic CEOs, who tend to overestimate expected returns and exhibit overconfidence in their investment decisions, would display higher risk-taking behaviors.

H3: CEOs from individualistic cultures are more likely to overinvest.

Masculinity denotes a cultural characteristic that delineates distinct social gender roles. In this construct, men are expected to embody traits of toughness and materialism, whereas women are expected to display modesty and sensitivity. Societies that value masculinity prioritize competitiveness, while societies that lean towards femininity prioritize equality. As a result, managers from cultures with higher masculinity scores make independent decisions and act more aggressively, while those from cultures with higher femininity scores compromise and seek common ground.

Jong and Semenov (2002) show that stock markets are more developed in societies with higher masculinity because members are willing to take more risks. In a similar vein, decisive and aggressive behavior encouraged by masculine societies results in reduced risk-aversion (Aggarwal, Kearney, and Lucey, 2012). To achieve a competitive advantage, CEOs from cultures with high masculinity scores would take more risks in allocating accumulated capital.

H4: CEOs from masculine cultures are more likely to overinvest.

Indulgence reflects a society's inclination towards gratification, pleasure, and enjoyment of life (Hofstede 2011). It represents the degree to which societies allow the relatively unrestrained satisfaction of fundamental and innate human desires for leisure and entertainment. On the other hand, restraint implies the idea that indulging in such pleasure should be restricted and controlled through rigorous societal standards. Alipour and Yaprak (2022) suggest that firms in indulgent countries are more likely to take risks. Similarly, driven by an overarching emphasis on life satisfaction and the pursuit of personal goals, CEOs from indulgent cultures may be more inclined to take risks. In more restrained cultures, where self-discipline and moderation are esteemed, CEOs might demonstrate more conservative risk-taking behaviors. CEOs originating from indulgent cultures could prioritize growth and shareholder returns, potentially resulting in overinvestment, while those from restrained cultures may stress financial prudence and risk management, mitigating the likelihood of overinvestment or underinvestment.

H5: CEOs from indulgent cultures are more likely to overinvest.

Power distance relates to the extent to which individuals with less power in a society are willing to tolerate the uneven distribution of power. This concept is manifested in the values held by both less powerful and more powerful members of society (Hofstede, 1980). As per Hofstede (1984), individuals in high power distance societies accept a hierarchical order that assigns each person a specific position without necessitating further justification. Additionally, the decisions of such CEOs are less likely to be challenged by their subordinates. Conversely, those in societies with low power distance scores pursue power equalization and demand justifications for power disparities (Hofstede, 1984). In low power distance cultures, where challenging authority is more commonplace, CEOs may exercise greater caution in risk-taking. Moreover, CEOs from high power distance cultures could influence corporate governance structures, potentially advocating for a more centralized and hierarchical structure. Such changes may influence the firm's transparency, accountability, and ultimately, its risk-taking preferences. For example, in the context of foreign portfolio investment destination countries, Aggarwal, Kearney, and Lucey (2012) find that increased levels of power distance tend to result in higher foreign debt and equity holdings. Therefore, the propensity for risk-taking, self-assurance, and a reduced likelihood of being questioned might heighten a CEO's tendency toward risk-taking and overinvestment.

H6: CEOs from power-distant cultures are more likely to overinvest.

3. Research Methodology

In this section, I investigate whether and how the cultural inheritance of CEOs influences investment decisions. A U.S. firm's optimum level of investment signifies that firm's proficiency to undertake all possible positive NPV (Net Present Value) projects. The difference between the investments carried out by the CEO and the ideal investment reflects the direction and the magnitude of the investment inefficiency.

Using the methodology introduced by Biddle, Hilary, and Verdi (2009), I calculate the degree of investment inefficiency by measuring the deviation from the expected optimal investment level. This deviation is quantified as the absolute value of the error term derived from the estimation of the following basic investment model:

$$INV_{i,t+1} = \beta_0 + \beta_1 \Delta SALES_{i,t} + \varepsilon_{i,t+1} \tag{1}$$

where $INV_{i,t+1}$ is the dependent variable in this equation pertaining to the overall investments, which are determined by adding up the expenditures for research and development, capital and acquisition, and deducting the cash proceeds from the sale of property, plant, and equipment. This value is then multiplied by 100 and divided by the total assets from the previous period, denoted by the lagged total assets. $\Delta SALES_{i,t-1}$ is the change in sales in the previous year. Equation (1) is used for each industry-year with at least 20 observations, and industry categorization is based on Fama and French's (1997) 48 industries.

To examine the discrepancy from the anticipated investment level, I construct three primary dependent variables based on the residuals from Equation (1). *Investment Inefficiency* is the absolute value of the residuals from Equation (1), where a greater value signifies reduced efficiency (Rajkovic, 2020; Biddle, Hilary, and Verdi, 2009). *Overinvestment* pertains to the unadjusted deviation from the optimal investment level, represented by the residuals; a larger value indicates that the firm is overinvesting. *Underinvestment* is the absolute value of the residuals calculated for firms with negative residuals, meaning a higher value corresponds to a more significant deviation from the optimal investment level.

To explore the influence of cultural heritage on corporate investment decisions at the CEO-level, I estimate the following regression model:

$$Y_{i,t+1} = \beta_0 + \beta_1 Hofstede\_Culture_{i,t} + \sum Controls_{i,t} + \varepsilon_{i,t+1} \tag{2}$$

where the dependent variable $Y_{i,t+1}$ equals *Investment Inefficiency, Overinvestment, and Underinvestment.* The main independent variable $Hofstede\_Culture_{i,t}$ equals to each of the Hofstede dimensions separately. Since the simultaneous execution of these dimensions in the regression models generates increased variance inflation factors, I include them in the equation individually. Those dimensions are *Uncertainty Avoidance, Long-Term Orientation, Individualism, Masculinity, Indulgence,* and *Power Distance*. All variables are defined in Appendix A.

Control variables used in equation (2) are shown to be the main determinants of corporate investment decisions in prior research (i.e., Rajkovic, 2020, Biddle, Hilary, and Verdi, 2009; Hann, Subasi, and Zheng, 2019). The inclusion of these variables lessens the omitted variable concerns and helps distinguish the link between CEO's culturally inherited behaviors and investment efficiency. To account for the growth prospects, I incorporate the market-to-book ratio (*MB*) as a control variable (e.g., Baker, Stein, and Wurgler, 2003). Moreover, to control the uncertainty that is adversely impacting firm investment efficiency (Liu and Wysocki, 2017), I use σ*(CFO)*, σ*(SALES)*, and σ*(INV)* variables.

The presence of resources and a firm's financial situation are also crucial factors to consider. Excess cash and liquidity can result in unproductive spending habits, while inadequate liquidity restricts companies from undertaking new projects. The capacity to secure loans and use internal resources further impacts investment possibilities and results. In line with previous studies, I control for the firm's financial health, borrowing capacity, and liquidity (Biddle, Hilary, and

Verdi, 2009). I include *Leverage*, *CFO Sale*, *Slack*, *Div*, *Z-Score*, *Tangibility*, K-*Structure*, *Industry K-Structure*, *Firm Size*, *Firm Age*, *Operating Cycle*, and *Loss* variables. Next, I control for the *Analysts*, which represents the number of analysts tracking the company as provided by IBES[22], and *Institutions*, which denotes the proportion of the firm's stocks owned by institutional investors as reported by Thomson Financial (13F Filings). Finally, I also control for the *CEO Tenure* to capture the experience the CEO has accumulated over the years during his service. I use industry and year-fixed effects and standard errors are clustered at the firm level. To alleviate the effect of outliers, all continuous control variables are winsorized at the 1st and 99th percentile.

4. Data and Summary Statistics

My primary sample comprises an unbalanced panel of 40,703 firm-year observations spanning from 1995 to 2018. I gather data on CEO nationalities from Bloomberg, supplemented by a manual web search. The sample encompasses both American and immigrant CEOs who served at U.S. firms. While Pan, Siegel, and Wang (2020) and Du, Yu, and Yu (2017) employ last names to identify directors' nationalities, using nationalities offers a more direct method for determining the associated cultures of CEOs. Moreover, indicating home country nationality suggests a more recent connection than a CEO who is a fifth-generation immigrant in the U.S.

I utilize Execucomp to pinpoint the firms where CEOs have worked, and Compustat for financial and accounting variables. Hofstede cultural dimensions (*Uncertainty Avoidance, Long-Term Orientation, Individualism, Masculinity, Indulgence,* and *Power Distance*) are obtained from Geert Hofstede's website. Following Biddle, Hilary, and Verdi (2009), I exclude financials (SIC code 6000-6999) and utilities (SIC code 4900-4999) from the dataset due to the distinct investment nature of firms in these industries. The sample distribution of firms and foreign national CEOs per year is presented in Appendix B.

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[22] Following earlier methodologies, I presume that firms not covered by IBES have zero analyst coverage (e.g., Chang, Dasgupta, and Hilary, 2009).

Table 1 displays the summary statistics for the main variables in the study. The average *Investment Inefficiency* is 10.53, with a median of -6.91, while the average *Overinvestment* is 15.05, with a median of 7.51, and the average *Underinvestment* is 8.15, with a median of 6.71. These sample firms exhibit significant growth potential, as indicated by the average market-to-book ratio of 2.15. The summary statistics for these firms resemble those in earlier research, such as Biddle, Hilary, and Verdi (2009) and Rajkovic (2020). The correlation matrix is provided in Table 2.

In Table 3, I present the results of a univariate analysis using Hofstede's cultural dimensions and the two-sample t-test to examine if the scores of each dimension differ significantly between the overinvesting and underinvesting firms. I find that the average *Uncertainty Avoidance* score for the underinvestment sample is 48.55, while for the overinvestment sample, it is 49.48, and the difference is statistically significant at the 1% level. The mean score for *Long-Term Orientation* in the underinvestment sample is 29.06, while for the overinvestment sample, it is 28.27, and this difference is also statistically significant at the 1% level.

These findings imply that when a culture exhibits a higher *Uncertainty Avoidance* score, the probability of overinvestment diminishes. Moreover, a higher *Long-Term Orientation* score is associated with a reduced likelihood of overinvestment in the short run. In addition, the mean scores for *Individualism*, *Masculinity*, *Indulgence*, and *Power Distance* are predominantly higher for overinvesting firms and are mostly significant. This observation suggests that as these cultural dimension scores increase in a nationality, a CEO from that nationality is more likely to overinvest.

5. Empirical Results

5.1 Main Findings

I explore the relationship between a CEO's cultural scores and anticipated investment levels. First, I estimate equation (1) to generate the INV_{t+1} variable, using annual sales growth as an indicator of a firm's growth opportunities. This helps me calculate the expected investment levels for firms in each of the Fama and French 48 industry portfolios, provided there are at least 20 observations per year. Subsequently, I assess the investment inefficiency based on the residuals.

5.1.1 Deviation from the Expected Level of Investment

Table 4 displays the results obtained from estimating Equation (2) for U.S. firms from 1995 to 2018. To examine the propensity for under- or overinvestment, I begin by investigating the impact on overall efficiency. The dependent variable in this analysis is investment inefficiency, with columns (1), (3), (5), (7), (9), and (11) presenting the coefficients of the model without control variables. The coefficients in the presence of control variables are shown in columns (2), (4), (6), (8), (10), and (12).

The findings reveal that *Uncertainty Avoidance* and *Long-Term Orientation* exhibit negative relationships with investment inefficiency, while *Individualism, Masculinity, Indulgence,* and *Power Distance* have positive relationships with inefficiency. For example, a one-unit increase in *Uncertainty Avoidance* (or *Long-Term Orientation*) score is significantly correlated with a 4.5% (or 3.0%) reduction in investment inefficiency. These outcomes support the first two hypotheses, as greater *Uncertainty Avoidance* and *Long-Term Orientation* are associated with increased risk aversion and fewer short-sighted projects.

Conversely, a one-unit rise in *Individualism* and *Masculinity* scores is significantly linked to a 6.8% and 16.3% growth in investment inefficiency. These values are connected to CEOs' self-attribution and overconfidence in their decision-making, which in turn makes them more prone to engage in inefficient projects. Similarly, *Indulgence* and *Power Distance* scores also demonstrate associations with increased investment inefficiency. Factors such as the percentage of institutional investors (a measure of external monitoring), firm age, leverage, and CEO tenure are found to significantly decrease firm investment inefficiency. The remaining coefficient estimates for the control variables align with previous research (e.g., Rajkovic, 2020).

Next, I estimate the modified version of equation (2) to differentiate between overinvestment and underinvestment as distinct forms of investment inefficiency, as presented in Table 4. In essence, positive residuals signify overinvestment, while negative residuals denote underinvestment. In Table 5, I display the coefficients for the concurrent examination of Hofstede's cultural dimensions in relation to overinvestment (Panel A) and underinvestment (Panel B). A one-unit increase in the uncertainty avoidance score corresponds to an approximately 18% decrease in overinvestment and a 2% increase in underinvestment. This suggests that if a CEO hails from a more risk-averse culture, the extent of investment opportunities they pursue will be diminished. Furthermore, a one-unit increase in the long-term orientation score is linked to a 12% decrease in overinvestment and a 2% increase in underinvestment. These results lend support to my hypotheses (H1 and H2), which posit that CEOs originating from cultures with a higher aversion to uncertainty and those with a long-term orientation are less inclined to engage in overinvestment.

Table 5 Panel A presents the results that demonstrate a positive and statistically significant correlation at the 1% level for individualism, masculinity, indulgence, and power distance. This indicates that CEOs originating from cultures with higher degrees of these traits are more likely to overinvest (*H2, H3. H4, H5*).[23] These findings are consistent with previous research, which suggests that individualism and masculinity are linked to overconfidence and overoptimism (Breuer, Riesener, and Salzmann, 2020). CEOs hailing from individualistic and masculine cultures tend to take more risks, which results in a deviation from the firm's optimal investment level. Additionally, CEOs from cultures that prioritize enjoying life (high indulgence) and those from societies that emphasize unequal rights for individuals lower in the hierarchy (high power distance) are prone to overinvest and focus on short-term gains.

Table 5 Panel B examines the relationship between CEO cultural dimensions and underinvestment. Although the coefficients are smaller for most of the measures, they remain largely significant, except for power distance. In accordance with previous studies, the factors that contribute to increased underinvestment are *Uncertainty avoidance* and *Long-term orientation*. Individualism, masculinity, and indulgence are associated with roughly 1%, 4%, and 3% lower underinvestment tendencies, respectively. In summary, the findings suggest that executives' national culture and the characteristics they inherit have a substantial influence on their ability to invest optimally.

5.1.2 Influence of External Monitoring

I proceed to investigate how the impact of CEO cultural attributes varies depending on the corporate governance mechanisms in place. Two proxies are employed to gauge the intensity of external monitoring pressure: (i) the number of analysts tracking the firm (*Analysts)* as reported by IBES, and (ii) institutional ownership (*Institutions*) as provided by Thomson Financial. If CEOs' cultural traits significantly influence their decision-making, the effect of Hofstede cultural dimensions should be more pronounced in firms experiencing less external monitoring. In other words, if uncertainty avoidance and long-term orientation serve as substitutes for other monitoring forms, their impact in reducing investment inefficiency should be less pronounced for firms with more robust external monitoring.

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[23] In untabulated tests, I estimate the pairwise correlation and the variance inflation factor found is below 5, suggesting that the models estimated in regressions are not affected by multicollinearity.

Table 6 Panel A showcases the results from estimating equation (2) for high and low analyst subsets, while Panel B presents the outcomes for high and low institutional investor subsets. The coefficient estimates for Hofstede cultural dimensions are significant in columns (7-12), indicating that risk-averse CEOs with a long-term focus are less likely to overinvest, and this effect is more pronounced in firms with low external monitoring. Likewise, CEOs originating from cultures characterized by higher levels of individualism, masculinity, indulgence, and power distance are less likely to overinvest when working at firms with substantial external monitoring. The impact of culture on overinvestment is more pronounced in firms with lower external monitoring due to several reasons. First, in firms with lower external monitoring, CEOs tend to have more freedom in making decisions without interference from external parties. This greater decision-making autonomy allows them to shape the company's culture (through the contagion effect) and influence its policies more directly, making their cultural characteristics more influential on the overall firm's behavior and performance. Second, lower external monitoring is often associated with weaker corporate governance structures. In such cases, the CEO may have more influence on the board of directors, enabling them to promote their cultural values and preferences more effectively throughout the firm.

5.2 Placebo Test

I find that CEOs from cultures that exhibit uncertainty aversion and long-term orientation tend to reduce overinvestment. In contrast, CEOs from individualistic, masculine, indulgent, and hierarchical cultures are more likely to overinvest compared to their counterparts. These results are both economically meaningful and statistically significant. However, there might be concerns that the observed effects could be attributed to unobserved factors rather than the cultural legacy of the CEOs. To address potential endogeneity concerns, I construct a placebo test.

For the placebo test, I randomly assign scores ranging from 1 to 100 for each of the CEO's cultural traits (Uncertainty Avoidance, Individualism, Masculinity, and Long-Term Orientation). In Table 7, I estimate the primary model in equation (2) using the same regression sample as in Table 4. The results reveal that the significance and coefficients of the CEO's cultural characteristics disappear and do not resemble the previous findings from Table 4. Consequently, these findings suggest that the cultural inheritance of the CEO plays a crucial role in shaping corporate investment decisions, and the baseline regression results are more likely attributable to the CEO's culture rather than other unobserved factors.

5.3 Robustness Checks

The comprehensive analysis conducted in the previous subsection reinforces the significant relationship between a CEO's cultural heritage and investment efficiency. To further corroborate these primary findings, I carry out four supplementary sets of analyses. First, I employ the cost of debt as an alternative dependent variable to represent risk-taking. By doing so, I aim to examine whether the observed relationship between CEO cultural legacy and investment efficiency holds when considering a different measure of risk. Next, I differentiate the investment measure into two distinct components: capital expenditure (*Capex*) and non-capital expenditure investment (*Non-Capex*). I then investigate the impact of cultural factors on these variables to determine if the influence of culture varies between these two types of investments. Lastly, given that Americans constitute a considerable portion of my sample, I re-estimate my primary analysis after excluding them from the dataset. This step aims to assess the robustness of the results by examining whether the observed associations are driven by a specific group or are more broadly applicable across diverse cultural backgrounds.

The *Cost of Debt* is calculated as the ratio of a firm's interest expense to its total outstanding debt. Essentially, it represents the average interest rate the firm pays on its debt obligations. This metric serves as an indication of the CEO's risk behavior; if the CEO is more risk-averse than others, it will affect the interest rate charged. Table 8 displays the results for the impact of CEO culture on a firm's cost of debt. Individualism, masculinity, indulgence, and power distance all contribute to an increase in the cost of debt, with coefficients that are significant at the 1% level. Conversely, the influence of uncertainty avoidance and long-term orientation on the cost of debt is negative, but not statistically significant. Table 8 suggests that CEOs exhibiting higher risk-taking propensities tend to face higher interest rates. However, CEOs characterized by risk-averse traits do not appear to have a considerable influence on the perception of their risk-taking behavior. Overall, the estimates are consistent with and support the baseline regression findings.

Following the methodologies employed by Richardson (2006) and Biddle, Hillary, and Verdi (2009), I separate investments into two distinct elements: *Capex*, determined by capital expenditures, times 100, scaled by the previous period's property, plant, and equipment, and *Non-Capex*, calculated by adding expenditures related to R&D and acquisitions, times 100, and then scaling the sum using the prior period's total assets. I then utilize them as dependent variables to explore whether cultural characteristics affect the decomposed components differently. The coefficient estimates presented in Table 9 indicate that the influence of cultural characteristics is more pronounced in relation to the *Non-Capex* portion of investments. Panel B of the findings demonstrates that the estimates are qualitatively similar; however, long-term orientation and power distance lose their statistical significance. This suggests that cultural traits may have a more considerable impact on the *Non-Capex* aspects of investments, such as R&D and acquisitions, as opposed to traditional capital expenditures. Potential explanations may be due to the discretionary nature of *Non-Capex* investments, such as R&D, when compared to *Capex* involving property, plant, and equipment. Also, *Non-Capex* investments often involve more subjective assessments of potential returns, hence, they are more tied to CEO's strategic vision and cultural attitudes toward innovation and risk. Moreover, the loss of significance for long-term orientation and power distance in Panel B implies that these cultural dimensions might not be as influential in explaining deviations from the expected investments when considering the decomposed components.

As a final robustness check, I estimate equation (2) using a sample of foreign national CEOs (non-U.S. nationals). The primary reason for this additional analysis is that American CEOs constitute 88% of my entire sample, which raises the possibility that the results could be influenced by the cultural characteristics of Americans. To address this concern, I exclude American CEOs from the sample and re-estimate the OLS model from Table 4, as shown in Table 10. The signs of the coefficients for the indicator variables remain consistent, implying that the main results are not driven solely by the cultural attributes of a specific group, particularly those from the U.S.

The findings indicate that uncertainty avoidance and long-term orientation have negative associations with overinvestment, while individualism and masculinity exhibit positive relationships. However, the significance of indulgence is lost, even though the coefficient remains negative. This observation aligns with Hofstede (2011), who posits that indulgence is predominantly prevalent in South and North America.

6. Conclusion

This study enriches the research centered on CEO-level determinants of optimal investment strategies by directly examining the role of cultural characteristics. Specifically, I investigate the relationship between CEO cultural legacy, which inherently influences individuals' daily actions, and firm investment efficiency in a corporate context. My findings reveal that CEOs from cultures with high uncertainty avoidance and long-term orientation contribute to a decrease in investment inefficiency. CEOs from such cultures are negatively associated with overinvestment because they tend to take fewer risks, focusing instead on investments with a high likelihood of success. Likewise, CEOs from long-term-oriented cultures are associated with reduced overinvestment as they prioritize long-term profits over short-term gains. Conversely, the results indicate that CEOs from cultures characterized by high masculinity, individualism, indulgence, and power distance are linked to greater overinvestment. CEO cultural legacy plays a critical role in explaining why CEOs with particular cultural traits exhibit different investment preferences than others and why they either deviate from or adhere to the optimal level of investment.

The main findings remain consistent when using the cost of debt as a proxy for CEO risk perception. Additionally, the study finds that the impact of risk-taking measures is more pronounced when external monitoring is weaker. The cultural attributes are more effective on the non-capex portion of investments. Findings suggest that due to the discretionary nature and the more subjective assessments of potential returns related to this component of investments, they are more affected by CEOs' strategic vision and attitude toward innovation and risk. These results maintain their robustness across alternative definitions of investment, subsamples involving only non-U.S. nationals, and a placebo test designed to mitigate concerns related to endogeneity. This comprehensive analysis not only strengthens the argument for the influence of CEO cultural legacy on investment efficiency but also emphasizes the importance of understanding these cultural dimensions for predicting and evaluating firms’ investment decisions and performance.

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Appendix A: Variable Definitions

Variable	Definition	Source
Dependent Variables		
Investment Inefficiency	The absolute value of residuals estimated from the investment model (equation 1).	Compustat
Overinvestment	The residuals estimated from the investment model (equation 1) for firms with positive residuals.	Compustat
Underinvestment	The absolute value of residuals estimated from the investment model (equation 1) for firms with negative residuals.	
INV_{t+1}	=the total of expenditures related to research and development, capital, and acquisition minus cash received from selling property, plant, and equipment, all multiplied by 100 and divided by lagged total assets.	Compustat
Cost of Debt	The ratio of the firm's interest expense (XINT) to its total outstanding debt (DLC + DLTT).	Compustat
Capex	The capital expenditure times 100 and divided by lagged PPE.	Compustat
Non-Capex	The sum of expenditures related to research and development and acquisition times 100 and divided by lagged total assets.	Compustat
Hofstede Cultural Dimensions		
Uncertainty Avoidance	The index measure ranging between 1 and 100 and defined as the extent to which the individuals in a society feel threatened by uncertain, unknown, or ambiguous situations.	Hofstede
Long-Term Orientation	The index measure ranging between 1 and 100 and stands for a society which fosters virtues oriented towards future rewards, in particular adaptation, perseverance, and thrift.	Hofstede
Individualism	The index measure ranging between 1 and 100 and defined as the looseness of the ties between individuals.	Hofstede
Masculinity	The index measure ranges between 1 and 100 and stands for a society in which social gender roles are clearly distinct.	Hofstede
Indulgence	The index measure ranging between 1 and 100 and stands for a society that allows relatively free gratification of basic human drives related to fun and enjoying life.	Hofstede
Power Distance	The index measure ranging between 1 and 100 and stands for a society in which the less powerful members of a society accept and expect that power is distributed unequally.	Hofstede
Control Variables		
CEO Tenure	The tenure of CEO at the time of the operations.	Bloomberg
Firm Size	The log of total assets.	Compustat
MB	The ratio of market value of total assets to book value of total assets.	Compustat
σ (CFO)	The standard deviation of cash flow from operations scaled by the mean total assets spanning from years t-5 to t-1.	Compustat
σ (SALES)	The standard deviation of sales scaled by the mean total assets spanning from years t-5 to t-1.	Compustat
σ (INV)	The standard deviation of investment from years t-5 to t-1.	Compustat
Z-Score	The sum of 3.3*Pretax Income/Total Assets, Sales/Total Asset, 0.25*Retained Earnings/Total Assets, 0.5*Working Capital/Total Assets.	Compustat

Appendix A cont.

Variable	**Definition**	**Source**
Tangibility	The ratio of net property, plant, and equipment to total assets.	Compustat
K-Str	The ratio of long-term debt to the combined total of long-term debt and market value of equity.	Compustat
Ind K-Str	The average K-structure for companies in the same industry (SIC 3-digit).	Compustat
CFO Sale	The proportion of cash flow from operations (CFO) in relation to sales.	Compustat
Slack	The proportion of cash to net property, plant and equipment (PPE).	Compustat
Div	A binary variable that is equal to one for a dividend-paying firm, and zero otherwise.	Compustat
Firm Age	The natural logarithm of firm age estimated as the number of years since the firm's first appearance in CRSP monthly stock file.	CRSP
Op Cycle	The natural logarithm of receivables to sales plus inventory to cost of goods sold multiplied by 360.	Compustat
Loss	A binary variable that is equal to one if net income before extraordinary items is negative, and it is equal to zero otherwise.	Compustat
Analysts	The number of analysts tracking the firm.	I/B/E/S
Institutions	The percentage of company stocks owned by institutional investors.	13F Filings

Appendix B: Firm and CEO Distribution

Fiscal Year	Firms (Total)		Firms with a Foreign National CEO	
	#	%	#	%
1995	1,066	2.62	89	8.35
1996	1,253	3.08	107	8.54
1997	1,401	3.44	119	8.49
1998	1,561	3.84	142	9.10
1999	1,780	4.37	161	9.04
2000	1,945	4.78	196	10.08
2001	2,100	5.16	220	10.48
2002	2,180	5.36	238	10.92
2003	2,214	5.44	239	10.79
2004	2,261	5.55	259	11.46
2005	2,175	5.34	252	11.59
2006	2,052	5.04	262	12.77
2007	1,964	4.83	283	14.41
2008	1,892	4.65	305	16.12
2009	1,755	4.31	295	16.81
2010	1,710	4.20	302	17.66
2011	1,634	4.01	291	17.81
2012	1,616	3.97	297	18.38
2013	1,591	3.91	308	19.36
2014	1,469	3.61	285	19.40
2015	1,378	3.39	263	19.09
2016	1,298	3.19	248	19.11
2017	1,206	2.96	222	18.41
2018	1,202	2.95	212	17.64
Total	40,703	100.00	5,595	13.75

Table 1: Summary Statistics

Variables	N	Mean	SD	p25	Median	p75
Dependent Variables						
INV_INEFF	40,703	10.53	13.32	3.36	6.91	12.57
Underinvestment	26,694	8.15	6.34	3.58	6.71	11.17
Overinvestment	14,009	15.05	20.19	2.87	7.51	18.06
INV_{t+1}	40,703	16.26	18.85	5.14	10.31	20.01
Hofstede Cultural Dimensions						
Uncertainty Avoidance	40,740	48.87	9.51	46.00	47.00	48.00
Long Term Orientation	40,703	30.24	11.82	26.00	27.00	28.00
Individualism	40,740	87.46	13.79	91.00	91.00	92.00
Masculinity	40,740	61.58	6.07	62.00	62.00	63.00
Indulgence	40,163	66.20	9.72	68.00	68.00	69.00
Power Distance	40,740	42.02	8.87	40.00	41.00	41.00
Control Variables						
CEO Tenure	40,703	8.92	8.06	3.00	7.00	12.00
MB	38,484	2.15	1.76	1.14	1.56	2.42
Firm Size	40,703	6.42	2.02	5.01	6.40	7.80
Leverage	40,701	0.96	74.12	0.01	0.32	0.86
σ (CFO)	40,263	0.08	0.13	0.03	0.05	0.08
σ (SALES)	40,275	443.33	1083.42	20.53	82.51	312.80
σ (INV)	38,680	14.66	28.80	2.75	6.20	14.45
Z-Score	40,703	1.08	1.59	0.57	1.23	1.88
Tangibility	40,658	0.26	0.24	0.08	0.18	0.38
K-Str	40,542	0.18	0.21	0.00	0.10	0.28
Ind K-Str	40,703	0.18	0.12	0.08	0.14	0.24
CFO Sale	40,576	-0.32	3.08	0.03	0.09	0.16
Slack	40,617	4.76	16.21	0.11	0.60	2.87
Div	40,208	0.42	0.49	0.00	0.00	1.00
Age	39,343	2.58	1.03	1.95	2.71	3.37
Op Cycle	39,637	4.63	0.77	4.22	4.70	5.11
Loss	40,703	0.29	0.45	0.00	0.00	1.00
Analysts	25,772	5.90	4.80	2.00	5.00	8.00
Institutions	40,703	0.48	0.21	0.34	0.56	0.66

Table 2: Correlation Matrix

This table presents correlations of the Firm Variables. All correlation coefficients except the italicized ones are significant at at least 5% level. All variables are defined in Appendix A.

Variables	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII
MB																	
Firm Size	-0.20																
Leverage	*0.00*	*0.00*															
σ (CFO)	0.30	-0.40	*0.01*														
σ (SALES)	-0.08	0.57	*0.00*	-0.13													
σ (INV)	0.11	-0.15	*0.00*	0.43	-0.07												
Z-Score	-0.14	0.23	-0.02	-0.40	0.12	-0.28											
Tangibility	-0.22	0.27	*0.01*	-0.21	0.10	-0.06	0.02										
K-Str	-0.38	0.33	*0.01*	-0.19	0.12	0.02	-0.05	0.38									
Ind K-Str	-0.32	0.31	*0.00*	-0.21	0.13	-0.07	0.09	0.50	0.57								
CFO Sale	-0.15	0.20	-0.04	-0.33	0.06	-0.15	0.40	0.10	0.08	0.12							
Slack	0.18	-0.22	*0.00*	0.34	-0.09	0.12	-0.26	-0.27	-0.18	-0.19	-0.26						
Div	-0.13	0.43	*0.00*	-0.24	0.25	-0.16	0.21	0.26	0.15	0.28	0.11	-0.17					
Age	-0.18	0.37	*0.01*	-0.28	0.24	-0.27	0.16	0.14	0.12	0.16	0.10	-0.12	0.41				
Op Cycle	*0.01*	-0.08	*0.00*	*0.01*	-0.07	-0.06	-0.08	-0.33	-0.13	-0.23	-0.08	*0.01*	-0.05	0.07			
Loss	0.06	-0.33	*0.01*	0.30	-0.13	0.20	-0.55	-0.12	0.05	-0.13	-0.23	0.19	-0.31	-0.22	0.03		
Analysts	0.10	0.50	*-0.01*	-0.09	0.38	*-0.01*	0.04	0.09	-0.02	*-0.01*	0.08	-0.05	0.08	0.07	-0.04	-0.08	
Institutions	*-0.01*	0.19	-0.01	-0.09	0.04	-0.07	0.11	0.02	0.04	0.01	0.04	-0.07	0.04	0.04	*-0.01*	-0.10	0.12

Table 3: Univariate Analysis

This table provides the univariate analysis conducted based on the regression sample in Table 4. It presents the two-sample t-test of whether the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance) in each subsample (Underinvest vs. Overinvest) are different from each other. Underinvest (overinvest) takes the value of one if the residuals from equation (1) are negative (positive).

	Underinvest (I)		Overinvest (II)		Difference (I-II)	P-value
	N	Mean	N	Mean		
Uncertainty Avoidance	26,712	48.55	14,028	49.48	-0.930***	0.000
Long-Term Orientation	26,694	29.06	14,009	28.27	0.790***	0.000
Individualism	26,712	87.35	14,028	87.65	-0.302**	0.040
Masculinity	26,712	61.49	14,028	61.77	-0.279***	0.000
Indulgence	26,353	66.15	13,810	66.28	-0.126	0.231
Power Distance	26,712	41.96	14,028	42.13	-0.173*	0.069

Table 4: CEO Cultural Measures and Deviation from the Expected Investment Levels

This table presents the result of the OLS regression model (2) for the association of the CEO cultural measures and deviation from the expected investment levels (Investment Inefficiency). Investment Inefficiency, *INV_INEFF,* is the absolute value of residuals estimated from the investment model (equation 1). The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). All variables are defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 4

	INV_INEFF											
	Uncertainty Avoidance		Long-Term Orientation		Individualism		Masculinity		Indulgence		Power Distance	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CEO Culture	-0.023***	-0.045***	-0.010*	-0.030***	0.051***	0.068***	0.173***	0.163***	0.062***	0.085***	0.069***	0.032***
	(-3.39)	(-4.94)	(-1.87)	(-4.25)	(10.71)	(11.18)	(16.40)	(12.20)	(9.28)	(9.75)	(9.53)	(3.34)
CEO Tenure		-0.037***		-0.038***		-0.036***		-0.037***		-0.040***		-0.037***
		(-3.41)		(-3.46)		(-3.30)		(-3.38)		(-3.58)		(-3.40)
MB		0.746***		0.750***		0.732***		0.734***		0.761***		0.750***
		(12.90)		(12.96)		(12.68)		(12.73)		(13.08)		(12.98)
Firm Size		-0.751***		-0.744***		-0.767***		-0.752***		-0.758***		-0.728***
		(-6.15)		(-6.09)		(-6.30)		(-6.18)		(-6.17)		(-5.96)
Leverage		-0.002**		-0.002**		-0.002**		-0.002**		-0.002**		-0.002**
		(-2.06)		(-1.99)		(-2.05)		(-2.15)		(-1.99)		(-2.08)
σ (CFO)		-0.410		-0.277		-0.168		-0.109		0.112		-0.433
		(-0.42)		(-0.28)		(-0.17)		(-0.11)		(0.11)		(-0.44)
σ (SALES)		0.134		0.136		0.151		0.155		0.129		0.126
		(1.23)		(1.25)		(1.39)		(1.42)		(1.18)		(1.15)
σ (INV)		0.017***		0.017***		0.017***		0.016***		0.017***		0.017***
		(4.96)		(5.00)		(4.94)		(4.76)		(5.03)		(5.00)
Z-Score		-0.504***		-0.499***		-0.511***		-0.512***		-0.515***		-0.493***
		(-5.46)		(-5.41)		(-5.55)		(-5.57)		(-5.53)		(-5.35)
Tangibility		-2.971***		-2.924***		-2.853***		-2.875***		-2.918***		-3.026***
		(-4.36)		(-4.29)		(-4.19)		(-4.23)		(-4.27)		(-4.44)
K-Str		1.887***		1.918***		1.794***		1.867***		2.072***		1.981***
		(3.16)		(3.21)		(3.01)		(3.14)		(3.46)		(3.32)
CFO Sale		0.092**		0.086**		0.081**		0.096**		0.087**		0.092**
		(2.33)		(2.20)		(2.06)		(2.45)		(2.21)		(2.34)
Slack		-0.010		-0.011		-0.010		-0.012*		-0.010		-0.011*
		(-1.55)		(-1.62)		(-1.44)		(-1.76)		(-1.54)		(-1.68)
Div		0.647***		0.642***		0.614***		0.679***		0.649***		0.675***
		(3.05)		(3.02)		(2.90)		(3.21)		(3.05)		(3.18)
Age		-0.234**		-0.230**		-0.290***		-0.242**		-0.270***		-0.180*
		(-2.29)		(-2.24)		(-2.84)		(-2.38)		(-2.63)		(-1.76)
Op Cycle		-0.189		-0.204		-0.171		-0.128		-0.158		-0.225
		(-1.27)		(-1.37)		(-1.15)		(-0.86)		(-1.06)		(-1.52)
Loss		-1.721***		-1.727***		-1.755***		-1.702***		-1.792***		-1.704***
		(-7.13)		(-7.15)		(-7.29)		(-7.07)		(-7.39)		(-7.06)
Ind K-Str		-7.323***		-7.188***		-6.976***		-7.098***		-7.203***		-7.379***
		(-4.29)		(-4.21)		(-4.10)		(-4.17)		(-4.22)		(-4.32)

Table 4 cont.

	INV_INEFF											
	Uncertainty Avoidance		Long-Term Orientation		Individualism		Masculinity		Indulgence		Power Distance	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Analysts		-0.023		-0.023		-0.022		-0.022		-0.027		-0.024
		(-1.01)		(-1.01)		(-0.95)		(-0.95)		(-1.16)		(-1.04)
Institutions		-0.017***		-0.018***		-0.020***		-0.019***		-0.018***		-0.015***
		(-3.18)		(-3.32)		(-3.89)		(-3.56)		(-3.38)		(-2.95)
Constant	11.657***	19.934***	10.838***	18.619***	6.106***	11.981***	-0.136	7.324***	6.398***	12.084***	7.638***	16.203***
	(34.48)	(18.19)	(61.19)	(18.33)	(14.62)	(10.88)	(-0.21)	(5.67)	(14.29)	(10.60)	(24.66)	(15.23)
Adj. R-squared	0.1098	0.1262	0.1097	0.1260	0.1120	0.1302	0.1154	0.1311	0.1110	0.1307	0.1115	0.1256
N	40,739	22,017	40,702	21,986	40,739	22,017	40,739	22,017	40,163	21,715	40,739	22,017

Table 5: CEO Cultural Measures, Overinvestment, and Underinvestment

This table presents the result of the OLS regression model (equation 2). Overinvestment is the absolute value of residuals and Underinvestment is the raw residuals estimated from the investment model (equation 1). The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). Panel A represents the estimates for the overinvestment subsample while Panel B represents the results for the underinvestment subsample. All variables are defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 5 Panel A: Overinvestment

	Overinvestment					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.187***	-0.128***	0.171***	0.487***	0.231***	0.114***
	(-8.07)	(-7.13)	(11.45)	(14.66)	(10.98)	(4.75)
CEO Tenure	-0.080***	-0.088***	-0.090***	-0.087***	-0.090***	-0.078***
	(-2.80)	(-3.08)	(-3.16)	(-3.07)	(-3.15)	(-2.74)
MB	1.214***	1.249***	1.211***	1.219***	1.261***	1.252***
	(9.53)	(9.78)	(9.55)	(9.67)	(9.88)	(9.80)
Firm Size	-1.844***	-1.766***	-1.873***	-1.834***	-1.862***	-1.807***
	(-5.63)	(-5.38)	(-5.74)	(-5.66)	(-5.66)	(-5.50)
Leverage	-0.002	-0.002	-0.002	-0.002*	-0.002	-0.002
	(-1.40)	(-1.22)	(-1.44)	(-1.67)	(-1.30)	(-1.47)
σ (CFO)	-2.370	-1.841	-1.670	-1.846	-0.637	-2.997
	(-1.08)	(-0.83)	(-0.76)	(-0.85)	(-0.29)	(-1.36)
σ (SALES)	0.332	0.342	0.360	0.433	0.320	0.364
	(1.15)	(1.19)	(1.26)	(1.52)	(1.11)	(1.26)
σ (INV)	0.029***	0.031***	0.030***	0.029***	0.029***	0.032***
	(3.55)	(3.80)	(3.68)	(3.54)	(3.50)	(3.93)
Z-Score	-0.801***	-0.769***	-0.801***	-0.868***	-0.786***	-0.730***
	(-3.71)	(-3.55)	(-3.72)	(-4.05)	(-3.59)	(-3.37)
Tangibility	-4.804***	-4.608**	-4.354**	-3.860**	-4.802***	-4.754***
	(-2.68)	(-2.57)	(-2.44)	(-2.18)	(-2.68)	(-2.65)
K-Str	1.265	1.451	1.321	1.844	2.257	1.703
	(0.71)	(0.82)	(0.75)	(1.05)	(1.27)	(0.96)
CFO Sale	0.014	-0.010	-0.023	0.028	-0.020	0.024
	(0.16)	(-0.12)	(-0.27)	(0.33)	(-0.24)	(0.28)
Slack	-0.016	-0.010	-0.009	-0.017	-0.013	-0.016
	(-0.92)	(-0.60)	(-0.55)	(-1.03)	(-0.74)	(-0.93)
Div	1.633***	1.520***	1.564***	1.670***	1.573***	1.816***
	(2.86)	(2.66)	(2.76)	(2.96)	(2.76)	(3.18)
Age	-0.361	-0.351	-0.432	-0.309	-0.443*	-0.151
	(-1.37)	(-1.32)	(-1.64)	(-1.18)	(-1.67)	(-0.57)
Op Cycle	-0.630*	-0.743**	-0.687*	-0.582	-0.740**	-0.770**
	(-1.69)	(-1.99)	(-1.85)	(-1.58)	(-1.98)	(-2.06)

Table 5 Panel A: Overinvestment cont.

	Overinvestment					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Loss	-4.222***	-4.221***	-4.293***	-4.112***	-4.463***	-4.021***
	(-6.59)	(-6.57)	(-6.73)	(-6.48)	(-6.92)	(-6.25)
Ind K-Str	-7.844	-7.106	-6.394	-7.139	-6.955	-8.281*
	(-1.64)	(-1.48)	(-1.34)	(-1.51)	(-1.46)	(-1.73)
Analysts	-0.004	-0.012	0.004	-0.012	-0.011	-0.013
	(-0.06)	(-0.20)	(0.07)	(-0.21)	(-0.18)	(-0.21)
Institutions	-0.018	-0.023*	-0.025*	-0.025*	-0.022	-0.016
	(-1.34)	(-1.69)	(-1.83)	(-1.85)	(-1.62)	(-1.19)
Constant	39.035***	33.661***	15.210***	-1.101	15.222***	24.422***
	(14.29)	(13.33)	(5.58)	(-0.35)	(5.44)	(9.19)
Adj. R-squared	0.1196	0.1181	0.1274	0.1370	0.1288	0.1146
N	7,640	7,625	7,640	7,640	7,523	7,640

Table 5 Panel B: Underinvestment

	Underinvestment					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	0.022***	0.021***	-0.014***	-0.038***	-0.034***	-0.008
	(4.34)	(5.37)	(-3.86)	(-5.20)	(-6.84)	(-1.52)
CEO Tenure	0.003	0.003	0.002	0.002	0.004	0.002
	(0.49)	(0.47)	(0.33)	(0.31)	(0.62)	(0.42)
MB	-0.732***	-0.723***	-0.726***	-0.727***	-0.722***	-0.731***
	(-16.31)	(-16.09)	(-16.16)	(-16.19)	(-16.07)	(-16.27)
Firm Size	0.274***	0.273***	0.271***	0.268***	0.284***	0.259***
	(4.23)	(4.22)	(4.19)	(4.14)	(4.38)	(4.00)
Leverage	0.050	0.049	0.050	0.052	0.038	0.051
	(1.58)	(1.55)	(1.58)	(1.63)	(1.20)	(1.60)
σ (CFO)	1.101*	0.932	0.988	0.937	0.968	0.979
	(1.69)	(1.43)	(1.52)	(1.44)	(1.49)	(1.50)
σ (SALES)	-0.256***	-0.261***	-0.259***	-0.257***	-0.265***	-0.248***
	(-4.43)	(-4.53)	(-4.49)	(-4.45)	(-4.58)	(-4.29)
σ (INV)	0.003*	0.003*	0.003*	0.003*	0.003	0.003*
	(1.71)	(1.78)	(1.73)	(1.85)	(1.58)	(1.81)
Z-Score	0.428***	0.432***	0.431***	0.429***	0.437***	0.426***
	(7.17)	(7.24)	(7.22)	(7.18)	(7.29)	(7.14)
Tangibility	-5.656***	-5.699***	-5.684***	-5.633***	-5.757***	-5.649***
	(-15.77)	(-15.89)	(-15.85)	(-15.71)	(-16.01)	(-15.74)
K-Str	3.628***	3.679***	3.661***	3.652***	3.697***	3.603***
	(9.78)	(9.91)	(9.86)	(9.85)	(9.93)	(9.70)
CFO Sale	0.290***	0.292***	0.295***	0.292***	0.295***	0.291***
	(9.65)	(9.74)	(9.81)	(9.73)	(9.83)	(9.70)
Slack	-0.012**	-0.012**	-0.012**	-0.011**	-0.010*	-0.011**
	(-2.36)	(-2.31)	(-2.26)	(-2.17)	(-1.92)	(-2.18)
Div	0.555***	0.579***	0.567***	0.546***	0.566***	0.547***
	(5.01)	(5.23)	(5.12)	(4.94)	(5.10)	(4.94)
Age	-0.024	-0.022	-0.029	-0.036	-0.029	-0.048
	(-0.46)	(-0.40)	(-0.54)	(-0.68)	(-0.54)	(-0.91)
Op Cycle	0.512***	0.517***	0.518***	0.502***	0.526***	0.533***
	(5.97)	(6.03)	(6.04)	(5.85)	(6.11)	(6.20)

Table 5 Panel B: Underinvestment cont.

	Underinvestment					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Loss	-0.044	-0.036	-0.032	-0.039	-0.027	-0.037
	(-0.35)	(-0.29)	(-0.25)	(-0.31)	(-0.22)	(-0.29)
Ind K-Str	-6.385***	-6.434***	-6.426***	-6.486***	-6.217***	-6.404***
	(-7.58)	(-7.64)	(-7.63)	(-7.70)	(-7.38)	(-7.60)
Analysts	-0.044***	-0.044***	-0.043***	-0.044***	-0.044***	-0.044***
	(-3.66)	(-3.66)	(-3.63)	(-3.69)	(-3.63)	(-3.70)
Institutions	-0.013***	-0.013***	-0.013***	-0.013***	-0.014***	-0.014***
	(-4.75)	(-4.54)	(-4.60)	(-4.72)	(-4.84)	(-5.03)
Constant	6.841***	7.259***	9.124***	10.424***	10.028***	8.357***
	(10.65)	(12.11)	(14.03)	(14.00)	(15.19)	(13.36)
Adj. R-squared	0.4576	0.4580	0.4574	0.4580	0.4589	0.4568
N	12,105	12,102	12,105	12,105	11,994	12,105

Table 6: Split Sample Analysis - External Monitoring

This table presents the result of the OLS regression model in Table 4 in split sample analysis. The dependent variable, INV_{t+1}, is calculated using equation (1). More specifically, it is the sum of research and development expenditure, capital expenditure, and acquisition expenditure, minus cash receipts from the sale of property, plant, and equipment times 100 and scaled by lagged total assets. Panel A represents the estimates for the number of analysts following the firm and the subsamples of High_Analysts and Low_Analysts are created based on the median. Panel B provides the estimates for the percentage of firm shares held by institutional investors and the subsamples of High_Institutions and Low_ Institutions are created based on the median. The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). All control variables are the same as in Table 4 and defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 6 Panel A: Analysts

	INV_{t+1}					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	High_Analysts					
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.045***	-0.023**	0.015	0.021	0.026*	-0.002
	(-3.20)	(-2.02)	(1.53)	(1.01)	(1.88)	(-0.12)
Controls (Table 4)	Yes	Yes	Yes	Yes	Yes	Yes
Constant	28.657***	26.958***	24.945***	24.766***	24.085***	26.156***
	(14.92)	(14.98)	(13.16)	(11.41)	(12.48)	(14.07)
Adj. R-squared	0.2567	0.2564	0.2562	0.2561	0.2618	0.2560
N	10,715	10,694	10,715	10,715	10,487	10,715
	Low_Analysts					
	(7)	(8)	(9)	(10)	(11)	(12)
CEO Culture	-0.068**	-0.069***	0.146***	0.446***	0.180***	0.120***
	(-2.15)	(-3.59)	(9.20)	(11.39)	(7.48)	(4.46)
Controls (Table 4)	Yes	Yes	Yes	Yes	Yes	Yes
Constant	41.443***	40.184***	24.820***	9.151***	25.658***	33.518***
	(15.44)	(17.40)	(9.26)	(2.69)	(9.08)	(13.43)
Adj. R-squared	0.2591	0.2604	0.2665	0.2706	0.2641	0.2605
N	8,190	8,182	8,190	8,190	8,153	8,190

Table 6 Panel B: Institutional Investors

	INV_{t+1}					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	High_Institutions					
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.032*	-0.017	0.007	-0.033	0.019	-0.002
	(-1.66)	(-1.08)	(0.52)	(-1.23)	(1.06)	(-0.12)
Controls (Table 4)	Yes	Yes	Yes	Yes	Yes	Yes
Constant	34.554***	33.464***	32.387***	35.198***	31.410***	33.112***
	(14.74)	(15.29)	(13.08)	(12.63)	(12.59)	(14.51)
Adj. R-squared	0.1954	0.1952	0.1952	0.1953	0.1961	0.1951
N	9,810	9,805	9,810	9,810	9,714	9,810

	Low_Institutions					
	(7)	(8)	(9)	(10)	(11)	(12)
CEO Culture	-0.072***	-0.062***	0.105***	0.285***	0.140***	0.035*
	(-4.03)	(-4.68)	(9.38)	(10.53)	(8.32)	(1.93)
Controls (Table 4)	Yes	Yes	Yes	Yes	Yes	Yes
Constant	37.368***	35.781***	25.052***	16.084***	25.126***	32.103***
	(17.87)	(18.61)	(12.11)	(6.46)	(11.60)	(15.93)
Adj. R-squared	0.2960	0.2970	0.3016	0.3034	0.3050	0.2950
N	9,095	9,071	9,095	9,095	8,926	9,095

Table 7: Placebo Test

This table presents the results of the OLS regression model (equation 2) for a placebo sample. I randomly assign scores for each of the six Hofstede Cultural Dimensions (without replacement). I draw the same number as the actual number of CEOs with the Hofstede cultural measures and re-estimate the model for this placebo sample. Investment Inefficiency is the absolute value of residuals estimated from the investment model (equation 1). The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). All variables are defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7 Placebo Test

	INV_INEFF					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.019	-0.003	0.003	0.002	0.002	-0.009
	(-0.58)	(-0.14)	(0.16)	(0.09)	(0.25)	(-0.95)
CEO Tenure	-0.002	-0.001	-0.019	-0.019	-0.038***	-0.037***
	(-0.09)	(-0.06)	(-1.06)	(-1.06)	(-3.45)	(-3.38)
MB	0.994***	0.997***	0.858***	0.858***	0.773***	0.749***
	(8.37)	(8.41)	(11.69)	(11.69)	(13.26)	(12.95)
Firm Size	-2.019***	-2.017***	-2.677***	-2.678***	-0.732***	-0.738***
	(-7.37)	(-7.40)	(-12.17)	(-12.18)	(-5.95)	(-6.04)
Leverage	-0.003***	-0.003***	-0.003***	-0.003***	-0.002**	-0.002**
	(-2.86)	(-2.87)	(-3.20)	(-3.20)	(-2.11)	(-2.11)
σ (CFO)	-3.183*	-3.190*	-3.491***	-3.492***	-0.102	-0.269
	(-1.69)	(-1.70)	(-2.61)	(-2.61)	(-0.10)	(-0.28)
σ (SALES)	-0.345**	-0.349**	-0.174	-0.174	0.116	0.135
	(-2.03)	(-2.06)	(-1.29)	(-1.29)	(1.06)	(1.23)
σ (INV)	-0.020***	-0.020***	-0.018***	-0.018***	0.017***	0.017***
	(-2.91)	(-2.93)	(-4.13)	(-4.13)	(5.00)	(5.01)
Z-Score	-0.221	-0.220	-0.102	-0.102	-0.504***	-0.495***
	(-1.02)	(-1.03)	(-0.75)	(-0.75)	(-5.39)	(-5.37)
Tangibility	-3.168*	-3.115*	-2.782**	-2.781**	-3.009***	-2.968***
	(-1.82)	(-1.80)	(-2.13)	(-2.13)	(-4.40)	(-4.35)
K-Str	-6.245***	-6.208***	-5.881***	-5.881***	2.071***	1.945***
	(-5.79)	(-5.78)	(-7.09)	(-7.09)	(3.45)	(3.25)
CFO Sale	0.130	0.129	0.114**	0.114**	0.092**	0.089**
	(1.55)	(1.55)	(2.12)	(2.12)	(2.34)	(2.25)
Slack	-0.007	-0.007	-0.009	-0.009	-0.011	-0.011*
	(-0.54)	(-0.56)	(-0.91)	(-0.91)	(-1.62)	(-1.72)
Div	0.998***	1.013***	0.797**	0.797**	0.697***	0.664***
	(2.69)	(2.74)	(2.42)	(2.42)	(3.26)	(3.13)
Age	0.535**	0.529**	-0.349	-0.349	-0.203**	-0.197*
	(1.99)	(1.97)	(-1.35)	(-1.35)	(-1.98)	(-1.93)
Op Cycle	0.058	0.051	-0.019	-0.019	-0.217	-0.209
	(0.17)	(0.15)	(-0.08)	(-0.08)	(-1.45)	(-1.40)

Table 7 cont.

	INV_INEFF					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Loss	-1.042***	-1.047***	-1.017***	-1.017***	-1.778***	-1.724***
	(-3.45)	(-3.48)	(-3.82)	(-3.82)	(-7.32)	(-7.14)
Ind K-Str	-4.803***	-4.784***	-1.875	-1.877	-7.317***	-7.326***
	(-2.89)	(-2.90)	(-1.05)	(-1.05)	(-4.28)	(-4.29)
Analysts	-0.025	-0.024	0.028	0.028	-0.026	-0.025
	(-0.84)	(-0.80)	(0.99)	(0.99)	(-1.15)	(-1.09)
Institutions	0.002	0.003	-0.010	-0.010	-0.015***	-0.016***
	(0.32)	(0.34)	(-1.42)	(-1.42)	(-2.85)	(-3.01)
Constant	25.831***	25.026***	31.156***	31.244***	17.432***	17.925***
	(9.32)	(9.83)	(13.30)	(12.42)	(15.33)	(16.89)
Adj. R-squared	0.2220	0.2302	0.2357	0.2357	0.1268	0.1252
N	21,836	21,805	21,836	21,836	21,715	22,017

Table 8: Robustness Test – The Cost of Debt

This table presents the result of the OLS regression model (2) for the association of the CEO cultural measures and the cost of debt. The cost of debt is the ratio of the firm's interest expense to its total outstanding debt. This is a proxy for the perceived risk-taking of the firm. The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). All variables are defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 8

	COST_OF_DEBT					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.022	-0.004	0.028***	0.052***	0.036**	0.150***
	(-1.42)	(-0.38)	(2.66)	(3.18)	(2.46)	(9.36)
CEO Tenure	-0.015	-0.014	-0.016	-0.015	-0.015	-0.008
	(-1.43)	(-1.37)	(-1.52)	(-1.45)	(-1.43)	(-0.74)
MB	-0.076	-0.076	-0.078	-0.079	-0.076	-0.076
	(-1.39)	(-1.40)	(-1.43)	(-1.46)	(-1.40)	(-1.40)
Firm Size	-0.134	-0.137	-0.125	-0.126	-0.127	-0.155
	(-0.99)	(-1.01)	(-0.93)	(-0.93)	(-0.93)	(-1.15)
σ (CFO)	-2.658***	-2.633**	-2.639**	-2.534**	-2.696***	-2.425**
	(-2.58)	(-2.55)	(-2.56)	(-2.46)	(-2.60)	(-2.36)
σ (SALES)	0.044	0.044	0.045	0.042	0.043	0.039
	(0.54)	(0.54)	(0.54)	(0.51)	(0.52)	(0.48)
σ (INV)	0.010	0.011	0.008	0.006	0.012	0.015
	(0.18)	(0.20)	(0.14)	(0.10)	(0.22)	(0.27)
Z-Score	0.109	0.110	0.110	0.115	0.109	0.140
	(1.18)	(1.18)	(1.18)	(1.24)	(1.16)	(1.51)
Tangibility	-0.457	-0.446	-0.468	-0.473	-0.491	-0.287
	(-0.60)	(-0.59)	(-0.62)	(-0.63)	(-0.64)	(-0.38)
K-Str	-1.424***	-1.412***	-1.390***	-1.399***	-1.425***	-1.347***
	(-3.00)	(-2.97)	(-2.93)	(-2.95)	(-2.98)	(-2.84)
CFO Sale	0.016	0.015	0.013	0.014	0.013	0.023
	(0.40)	(0.38)	(0.33)	(0.36)	(0.32)	(0.59)
Slack	0.049***	0.049***	0.049***	0.049***	0.049***	0.049***
	(6.00)	(6.02)	(6.00)	(6.02)	(5.98)	(6.03)
Div	0.211	0.208	0.207	0.203	0.208	0.195
	(1.06)	(1.04)	(1.04)	(1.02)	(1.04)	(0.98)
Age	0.241	0.235	0.230	0.221	0.234	0.236
	(1.55)	(1.51)	(1.48)	(1.42)	(1.49)	(1.52)
Op Cycle	0.156	0.150	0.148	0.159	0.148	0.139
	(0.95)	(0.92)	(0.91)	(0.97)	(0.90)	(0.85)

Table 8 cont.

	COST_OF_DEBT					
	Uncertainty Avoidance	Long-Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Loss	0.187	0.186	0.180	0.188	0.182	0.215
	(1.15)	(1.15)	(1.11)	(1.16)	(1.11)	(1.33)
Ind K-Str	-0.859	-0.872	-0.855	-0.827	-0.896	-0.829
	(-0.87)	(-0.88)	(-0.86)	(-0.83)	(-0.90)	(-0.84)
Analysts	-0.009	-0.009	-0.009	-0.009	-0.010	-0.006
	(-0.52)	(-0.51)	(-0.56)	(-0.55)	(-0.58)	(-0.35)
Institutions	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	(-0.40)	(-0.42)	(-0.41)	(-0.42)	(-0.39)	(-0.47)
Constant	1.555	0.592	-2.054	-2.772*	-1.941	-5.690***
	(1.09)	(0.47)	(-1.35)	(-1.77)	(-1.25)	(-4.18)
Adj. R-squared	0.0158	0.0157	0.0161	0.0163	0.0162	0.0212
N	17,412	17,407	17,412	17,412	17,254	17,412

Table 9: Robustness Test – Non-Capex vs Capex

This table presents the result of the OLS regression model. Dependent variables (*Non-Capex* vs *Capex*) are derived from the decomposition of INV_{t+1}, which is calculated using equation (1). More specifically, *Non-Capex* is the sum of research and development expenditure and acquisition expenditure times 100 and scaled by lagged total assets. *Capex* is the capital expenditure times 100 and divided by lagged PPE. The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). All variables are defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 9 Panel A

	NON-CAPEX					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.104***	-0.050***	0.071***	0.324***	0.102***	0.141***
	(-7.05)	(-4.39)	(7.27)	(15.20)	(7.33)	(9.26)
CEO Tenure	-0.042**	-0.041**	-0.040**	-0.040**	-0.036**	-0.045**
	(-2.39)	(-2.35)	(-2.31)	(-2.30)	(-2.07)	(-2.56)
MB	1.624***	1.642***	1.624***	1.597***	1.637***	1.633***
	(17.92)	(18.14)	(17.92)	(17.69)	(17.89)	(18.04)
Firm Size	1.745***	1.754***	1.743***	1.745***	1.765***	1.758***
	(9.34)	(9.39)	(9.33)	(9.38)	(9.36)	(9.42)
Leverage	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(-0.14)	(-0.09)	(-0.17)	(-0.28)	(-0.12)	(-0.14)
σ (SALES)	-2.460***	-2.444***	-2.437***	-2.380***	-2.447***	-2.464***
	(-14.16)	(-14.09)	(-14.03)	(-13.76)	(-13.97)	(-14.20)
σ (INV)	0.034***	0.036***	0.035***	0.034***	0.036***	0.035***
	(6.58)	(6.82)	(6.69)	(6.48)	(6.90)	(6.70)
Z-Score	-2.898***	-2.876***	-2.906***	-2.931***	-2.889***	-2.828***
	(-19.92)	(-19.78)	(-19.97)	(-20.23)	(-19.57)	(-19.46)
K-Str	7.541***	7.563***	7.454***	7.405***	7.700***	7.808***
	(7.85)	(7.88)	(7.76)	(7.74)	(7.97)	(8.13)
CFO Sale	-0.019	-0.031	-0.034	-0.010	-0.029	-0.013
	(-0.31)	(-0.50)	(-0.54)	(-0.17)	(-0.45)	(-0.20)
Slack	0.013	0.012	0.013	0.010	0.016	0.010
	(1.27)	(1.21)	(1.26)	(1.00)	(1.54)	(0.98)
Div	0.424	0.437	0.415	0.542	0.468	0.547
	(1.24)	(1.28)	(1.21)	(1.59)	(1.36)	(1.60)
Age	-1.260***	-1.227***	-1.268***	-1.225***	-1.261***	-1.126***
	(-7.69)	(-7.49)	(-7.73)	(-7.52)	(-7.64)	(-6.88)
Op Cycle	0.110	0.061	0.076	0.164	0.067	0.019
	(0.47)	(0.26)	(0.32)	(0.70)	(0.28)	(0.08)
Loss	-0.848**	-0.843**	-0.875**	-0.802**	-0.866**	-0.797**
	(-2.18)	(-2.17)	(-2.25)	(-2.07)	(-2.21)	(-2.05)
Ind K-Str	-9.054***	-8.789***	-8.824***	-8.846***	-8.873***	-8.976***
	(-3.67)	(-3.57)	(-3.58)	(-3.60)	(-3.59)	(-3.64)

Table 9 Panel A cont.

	NON-CAPEX					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Analysts	-0.008	-0.012	-0.010	-0.014	-0.009	0.002
	(-0.24)	(-0.33)	(-0.28)	(-0.39)	(-0.26)	(0.06)
Institutions	0.006	0.004	0.003	0.002	0.002	0.007
	(0.74)	(0.50)	(0.42)	(0.27)	(0.21)	(0.88)
Constant	18.281***	14.594***	7.028***	-7.539***	6.214***	6.753***
	(11.22)	(9.80)	(4.28)	(-3.85)	(3.63)	(4.28)
Adj. R-squared	0.1991	0.1986	0.1992	0.2058	0.1994	0.2004
N	21,690	21,659	21,690	21,690	21,388	21,690

Table 9 Panel B

	CAPEX					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.631***	-0.011	0.224**	0.603**	0.392**	-0.080
	(-3.66)	(-0.08)	(1.96)	(2.40)	(2.38)	(-0.44)
CEO Tenure	-0.110	-0.121	-0.111	-0.114	-0.118	-0.120
	(-0.54)	(-0.59)	(-0.54)	(-0.56)	(-0.57)	(-0.58)
MB	5.435***	5.552***	5.486***	5.461***	5.476***	5.553***
	(5.12)	(5.22)	(5.17)	(5.15)	(5.08)	(5.23)
Firm Size	2.437	2.440	2.427	2.430	2.383	2.434
	(1.12)	(1.12)	(1.11)	(1.11)	(1.07)	(1.11)
Leverage	-0.019	-0.019	-0.019	-0.020	-0.019	-0.020
	(-1.23)	(-1.26)	(-1.25)	(-1.27)	(-1.22)	(-1.27)
σ (SALES)	-3.511*	-3.472*	-3.432*	-3.354*	-3.363	-3.490*
	(-1.73)	(-1.71)	(-1.69)	(-1.65)	(-1.63)	(-1.72)
σ (INV)	0.260***	0.267***	0.266***	0.264***	0.265***	0.268***
	(4.29)	(4.39)	(4.37)	(4.34)	(4.32)	(4.41)
Z-Score	-4.613***	-4.409***	-4.533***	-4.522***	-4.656***	-4.416***
	(-2.70)	(-2.58)	(-2.66)	(-2.65)	(-2.67)	(-2.59)
K-Str	-18.391	-17.638	-18.296	-18.061	-17.887	-17.750
	(-1.64)	(-1.57)	(-1.63)	(-1.61)	(-1.57)	(-1.58)
CFO Sale	-8.626***	-8.671***	-8.693***	-8.640***	-8.658***	-8.677***
	(-11.63)	(-11.68)	(-11.72)	(-11.64)	(-11.58)	(-11.69)
Slack	1.216***	1.201***	1.208***	1.200***	1.246***	1.200***
	(10.07)	(9.94)	(10.00)	(9.94)	(10.10)	(9.95)
Div	-5.851	-5.648	-5.750	-5.456	-5.739	-5.619
	(-1.46)	(-1.41)	(-1.44)	(-1.36)	(-1.42)	(-1.41)
Age	-5.548***	-5.158***	-5.381***	-5.201***	-5.447***	-5.193***
	(-2.90)	(-2.69)	(-2.81)	(-2.73)	(-2.81)	(-2.72)
Op Cycle	-3.587	-3.846	-3.819	-3.672	-3.825	-3.822
	(-1.30)	(-1.39)	(-1.38)	(-1.33)	(-1.36)	(-1.38)
Loss	-11.337**	-11.372**	-11.430**	-11.264**	-11.647**	-11.386**
	(-2.49)	(-2.50)	(-2.51)	(-2.48)	(-2.52)	(-2.50)
Ind K-Str	19.162	20.046	20.279	20.103	19.958	20.078
	(0.67)	(0.70)	(0.71)	(0.70)	(0.69)	(0.70)

Table 9 Panel B cont.

	CAPEX					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Analysts	0.210	0.232	0.218	0.219	0.222	0.233
	(0.51)	(0.56)	(0.53)	(0.53)	(0.53)	(0.56)
Institutions	-0.080	-0.076	-0.085	-0.084	-0.082	-0.076
	(-0.91)	(-0.86)	(-0.97)	(-0.95)	(-0.92)	(-0.86)
Constant	92.134***	59.301***	40.550**	21.143	34.237*	62.439***
	(4.83)	(3.40)	(2.11)	(0.92)	(1.70)	(3.38)
Adj. R-squared	0.0207	0.0200	0.0202	0.0203	0.0202	0.0201
N	21,995	21,964	21,995	21,995	21,693	21,995

Table 10: Robustness Test - Cultural Measures and Investment Inefficiency among Foreign CEOs

This table presents the result of the OLS regression model (2) for the association of the CEO cultural measures and deviation from the expected investment levels (Investment Inefficiency). Investment Inefficiency, *INV_INEFF,* is the absolute value of residuals estimated from the investment model (equation 1). The variables of interest are the Hofstede cultural dimensions (Uncertainty Avoidance, Long-term Orientation, Individualism, Masculinity, Indulgence, and Power Distance). The sample contains only non-U.S. nationals. All variables are defined in Appendix A. The sample contains firm year-level observations from 1995 to 2018. All financial variables are winsorized at the 1% and 99% levels. Industry and year-fixed effects are included in each regression and the standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 10

	INV_INEFF					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Culture	-0.032**	-0.042***	0.051***	0.064***	0.023	-0.000
	(-2.54)	(-3.57)	(4.24)	(3.83)	(1.63)	(-0.01)
CEO Tenure	0.045	0.040	0.062*	0.047	0.038	0.042
	(1.24)	(1.07)	(1.68)	(1.28)	(0.99)	(1.14)
MB	0.813***	0.833***	0.816***	0.824***	0.991***	0.814***
	(5.47)	(5.56)	(5.50)	(5.55)	(6.38)	(5.47)
Firm Size	-1.297***	-1.356***	-1.337***	-1.282***	-1.188***	-1.285***
	(-3.87)	(-4.02)	(-4.00)	(-3.83)	(-3.38)	(-3.82)
Leverage	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-1.21)	(-1.15)	(-1.31)	(-1.30)	(-1.25)	(-1.25)
σ (CFO)	-3.602*	-3.798*	-3.228	-2.796	-2.743	-3.211
	(-1.78)	(-1.87)	(-1.60)	(-1.38)	(-1.33)	(-1.58)
σ (SALES)	0.440	0.507*	0.497*	0.515*	0.330	0.460
	(1.48)	(1.70)	(1.68)	(1.74)	(1.07)	(1.55)
σ (INV)	0.044***	0.047***	0.046***	0.043***	0.048***	0.044***
	(5.23)	(5.42)	(5.36)	(5.02)	(5.54)	(5.20)
Z-Score	-0.510**	-0.480**	-0.511**	-0.562***	-0.546**	-0.507**
	(-2.51)	(-2.34)	(-2.52)	(-2.76)	(-2.57)	(-2.49)
Tangibility	-0.982	-0.259	-0.245	-0.684	-1.752	-0.601
	(-0.47)	(-0.12)	(-0.12)	(-0.33)	(-0.81)	(-0.29)
K-Str	2.024	1.913	1.595	1.727	2.499	1.889
	(1.15)	(1.09)	(0.91)	(0.98)	(1.39)	(1.07)
CFO Sale	0.186**	0.171**	0.168**	0.188***	0.196***	0.176**
	(2.56)	(2.36)	(2.33)	(2.60)	(2.72)	(2.43)
Slack	0.012	0.011	0.012	0.009	0.010	0.011
	(0.96)	(0.83)	(0.89)	(0.65)	(0.74)	(0.85)
Div	0.308	0.258	0.370	0.399	0.343	0.340
	(0.45)	(0.37)	(0.54)	(0.58)	(0.47)	(0.49)
Age	-0.000	-0.046	-0.062	0.096	0.114	0.072
	(-0.00)	(-0.16)	(-0.21)	(0.33)	(0.39)	(0.25)
Op Cycle	0.027	-0.049	0.019	0.116	0.052	-0.014
	(0.07)	(-0.13)	(0.05)	(0.30)	(0.13)	(-0.04)

Table 10 cont.

	INV_INEFF					
	Uncertainty Avoidance	Long Term Orientation	Individualism	Masculinity	Indulgence	Power Distance
	(1)	(2)	(3)	(4)	(5)	(6)
Loss	-0.555	-0.614	-0.643	-0.539	-0.678	-0.591
	(-0.89)	(-0.98)	(-1.03)	(-0.86)	(-1.04)	(-0.94)
Ind K-Str	-7.305	-6.274	-6.022	-6.448	-7.572	-7.004
	(-1.17)	(-1.00)	(-0.96)	(-1.03)	(-1.19)	(-1.12)
Analysts	0.019	0.019	0.012	0.010	-0.012	0.014
	(0.30)	(0.30)	(0.19)	(0.15)	(-0.18)	(0.23)
Institutions	0.029**	0.024*	0.025*	0.026**	0.033**	0.027**
	(2.26)	(1.86)	(1.93)	(1.99)	(2.42)	(2.10)
Constant	16.337***	17.099***	11.274***	9.866***	12.533***	14.259***
	(6.04)	(6.34)	(4.23)	(3.50)	(4.50)	(5.43)
Adj. R-squared	0.1576	0.1606	0.1611	0.1601	0.1776	0.1556
N	2,864	2,833	2,864	2,864	2,561	2,864

Chapter 3: Foreign Experience of Acquirer CEOs and Shareholder Returns[24]

1. Introduction

Mergers and acquisitions (M&As) represent pivotal corporate events wherein CEOs wield significant influence over decision-making processes, such as target valuation, deal negotiation, completion, and integration of the newly acquired entity. Recent literature underscores the crucial role played by CEO characteristics and backgrounds, such as age, power, education, narcissism, biases, and overconfidence, in shaping M&A outcomes (Zhou, Dutta, and Zhu, 2020; Malmendier and Tate, 2008; Aktas, Bodt, Bollaert, and Roll, 2016; Jiang, Qian, and Yonker, 2018). However, the impact of foreign experience on deal performance is a relatively understudied area, with divergent views on the subject. Scholars argue that domestic CEOs possess an advantage over foreign counterparts due to their in-depth understanding of local cultural norms, businesses, and robust networks (Masulis, Wang, and Xie, 2012). However, these accumulated local connections can also result in home biases that negatively impact M&A outcomes (Jiang, Qian, & Yonker, 2018). This study investigates the association between CEOs' foreign experience and domestic M&A performance, as foreign experience may counterbalance home biases by reducing the reliance on deeply ingrained local ties. Furthermore, foreign experience demonstrates characteristics such as courage, vision, adaptability, and commitment to success, which are common among individuals who ventured outside their comfort zones to pursue education or employment opportunities. While abroad, CEOs likely faced and overcame diverse sets of challenges, boosting their confidence in their judgment and understanding of best practices. Consequently, we posit that CEOs with foreign experience are associated with more favorable deal outcomes.

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[24] This essay is based on a joint work with Kose John and was written during the author's position at the NYU Stern School of Business.

The value of background diversity in the workforce, particularly in the C-suite, has been widely acknowledged by both practitioners and academics. Executives with foreign experience have been suggested as a precious resource as more businesses and organizations take part and compete in the global markets (Carpenter, Sanders, and Gregersen, 2001; Morris, Snell, and Björkman, 2016). Such individuals bring fresh perspectives and unique experiences to the management team, offering new insights and innovative ideas that can help companies advance their business goals in an interconnected and globalized business environment. CEOs with foreign experience enjoy several advantages that can positively impact M&A performance. First, compared to a domestic CEO who has solely operated in the United States, CEOs with international experience may have fewer home biases as they are relatively disenfranchised from local connections and ties (Chung, Green, and Schmidt, 2018; Stroup, 2017). Hence, they may have stronger incentives to prioritize shareholders' wealth rather than pleasing their networks. Second, CEOs who grew up in their home countries and later ventured out of their comfort zones to pursue a career or a degree in a different country, have a special advantage. Their experience of navigating and succeeding in a completely different system can enhance their adaptability, flexibility, resilience, and problem-solving skills (Berry, 2005; Ward, Bochner, and Furnham, 2001). They may become more cognizant of the complexities that can arise when two companies with distinct corporate cultures and conflicting objectives merge, which may help during the integration process. Third, as suggested by Gianetti, Liao, and Yu (2014), managers with foreign exposure may implement better management techniques with their vast knowledge of international systems and work cultures. Fourth, these individuals develop self-confidence and trust in their judgment, knowing they have experience achieving challenges in different systems. This comparative advantage facilitates the selection of optimal targets, better valuation, and negotiation.

We analyze the foreign experience by conducting a comprehensive assessment of whether and to what extent it influences domestic merger outcomes. The measure of this specific attribute is constructed based on three international characteristics, i.e., the CEO's nationality, country of higher education, and employment history. We empirically examine whether deals conducted by foreign experienced CEOs, measured by these three attributes, create benefits to equity holders. CEOs possessing foreign experience, with their international knowledge, networks, and skills, can bring valuable human and social capital to firms, thereby facilitating the adoption of better management practices (e.g., Bloom and Van Reenen, 2007). We hypothesize that having foreign experience influences CEOs' sophistication and overall talents during the merger process. Moreover, the lack of accumulated ties in the states and having relatively fewer connections with local firms make these CEOs less likely to undertake bias-driven acquisitions. Therefore, we expect the foreign experience of CEOs to conduct value-enhancing deals and realize positive market reactions to deal announcements.

Our baseline findings indicate that foreign experience creates value via M&A deals and that U.S. firms directed by such CEOs realize around 3.4% higher cumulative announcement returns three days surrounding the deal announcement. To address potential endogeneity concerns related to unobserved confounding factors, we use Oster's δ method to assess the robustness of the observed relationship between foreign experience and announcement returns. We find a high value which indicates that the findings are greatly robust to omitted variable bias. Next, we conduct a placebo test to address concerns of spurious correlations related to other firm or executive characteristics and the announcement returns. The findings provide further evidence that our results are more likely to be driven by CEOs' foreign experience.

When the source of value creation is investigated, we find that it is related to the acquisition of private and subsidiary targets for which the acquisition is complicated due to the lack of available market value. Additionally, when such deals are financed with stock, the acquirer returns increase. We find that the initial baseline results are related to CEOs' increased tendency to acquire non-public firms and pay them entirely with equity. When these targets are offered stock instead of cash or a combination of cash and stock, they face deferred tax implications. Furthermore, having ownership rights in the newly formed entity and the monitoring effects motivate targets to sell at a discounted price. Moreover, findings show that CEOs with diverse backgrounds pay lower premiums and target firms realize significantly lower abnormal returns in these acquisitions, while in general, abnormal returns significantly increase during M&As. These findings indicate that the bidder firm obtains part of the synergy by paying lower for targets. Results imply CEOs' ability to identify optimal targets and negotiation power.

In order to solidify the validity of our findings, we have carefully addressed the potential concern of the "cream rises to the top" phenomenon. This refers to the possibility that CEOs with foreign experience may already be among the most skilled and accomplished individuals in their home countries, with their success being unrelated to their international exposure. To mitigate this concern, we have excluded U.S.-educated CEOs from our sample and divided the dataset for foreign experienced CEOs into two groups: those with high-quality education comparable to the U.S. and those from other countries. This approach enables us to assess the influence of foreign experience on M&A performance without the distortion caused by the "cream rises to the top" bias. Our findings validate that foreign experience is indeed correlated with higher announcement returns, and this is not due to an overrepresentation of high achievers among CEOs with foreign experience. Consequently, CEOs with diverse backgrounds acquire valuable experiences and perspectives, which are associated with superior problem-solving and negotiation abilities, which ultimately contribute to the identification of high-synergy target firms.

This paper contributes to the studies evaluating the impact of CEO attributes on M&A outcomes in several ways. First, extending the line of research on the influence of CEO attributes on corporate outcomes, we suggest a link between the distinct experiences of CEO foreign experience and domestic M&A performance. Second, as the earlier literature reports, on average, bidder firms realize close to zero returns at announcing deals. We propose a novel variable in the CEO background associated with firms' realizing 3.4% higher returns. Third, prior literature points to CEOs' motivations toward acquiring biased targets and pleasing their local connections. We provide a characteristic where an individual is less likely to hold biases towards certain firms and states and less accumulated local connections. Finally, earlier research reviews culture's influence on M&A decisions; however, they focus on culture at the national or firm level. To the best of our knowledge, this is among the first studies investigating CEO-level culture and its impact on target selection and deal performance.

The rest of the paper is organized as follows: Section 2 provides brief literature on the influence of a CEO's role and background on M&As; Section 3 presents the data, sample, and univariate analysis; Section 4 describes the empirical models and findings, and Section 5 delivers the concluding remarks.

2. Literature Review

This study contributes to the literature on CEO characteristics and mergers and acquisitions. Previous research has shown that the attributes of executives influence corporate policies and performance (e.g., Henderson and Hutton, 2018; Malmendier, Tate, and Yan, 2011).

Among executive members, the skills and talents of CEOs are unique resources that affect a company's accomplishments (Daily, Certo, and Dalton, 2000). Previous studies have examined how a CEO's background affects investment styles, R&D, and other corporate investment decisions (e.g., Dittmar and Duchin, 2015). Bernile, Bhagwat, and Rau (2017) find that CEOs who suffer fatal tragedies without immense negative consequences are more aggressive risk-takers. Hu and Liu (2015) find that CEOs with more diverse work histories are less likely to be constrained by insufficient internal financing due to their rich networks' ability to alleviate information asymmetry and provide access to external funds.

A CEO's foreign experience has been shown to influence investment strategies and firm performance (Le and Kroll, 2017; Carpenter, Sanders, and Gregersen, 2001). Slater and Dixon-Fowler's (2009) findings suggest that having a CEO with international assignment experience enhances a company's corporate social performance. International experience influences personal values by promoting open-mindedness, understanding, respect, and responsibility for others (Black and Duhon, 2006; Chieffo and Griffiths, 2004). Athanassiou and Nigh (1999) suggest that international assignment experience provides CEOs with unique skills and perspectives that aid them in better managing multinational corporations. Foreign-born CEOs are successful if they have a transformational vision (Pandey and Rhee, 2015) or strong international experience (Georgakakis and Ruigrok, 2017). Carpenter, Sanders, and Gregersen (2001) argue that CEOs with overseas experience create value for their firms by being valuable resources. Therefore, CEOs with overseas involvement are presumed to have a unique set of experiences and talents that make them more sophisticated.

Previous literature shows that CEOs serving at U.S. firms exhibit home bias in domestic acquisitions. Familiarity bias refers to individuals making decisions based on situations and environments they already know, which may lead to an increased propensity to invest in familiar assets under uncertainty. Investors exhibit familiarity bias in various ways, including investing in local holdings or domestic shares (Coval and Moskowitz, 1999). Pool, Stoffman, and Yonker (2012) demonstrate that familiarity influences mutual fund managers' portfolio decisions. Chung, Green, and Schmidt (2018) find that birthplace acquisitions do not bring value to acquirer firms due to CEO home bias. Similarly, Jiang, Qian, and Yonker (2018) suggest that CEOs acquire targets from their home states for their objectives and these deals are on average value destructive.

Building on this literature, we examine whether a CEO's foreign background influences success in selecting optimal targets and completing value-enhancing mergers and acquisitions. We hypothesize that CEOs with foreign experience will realize higher returns on domestic deal announcements by eradicating potential home biases and making target selections based on research on investment opportunities in the U.S. Therefore, we posit that U.S. firms with CEOs possessing foreign experience will identify optimal targets due to CEO's mitigated home biases and they will realize higher announcement returns because of CEOs' experience, skills, and sophistication acquired overseas.

3. Data and Summary Statistics

3.1 Data

We rely on two primary databases to construct the deal-level data sample: BoardEx, which provides information on the experiences of CEOs, and Securities Data Company (SDC), which helps us identify M&As in the United States. To enhance the CEO's biographical information, we also collect data manually from the Bloomberg C-suite database. Our data is further supplemented by the ExecuComp and Institutional Shareholder Services (ISS) databases. To analyze the returns related to deal announcements, we use the Center for Research in Security Prices (CRSP), and for accounting data of acquiring companies in the U.S., we refer to Compustat.

The sample includes deals conducted by U.S. firms from the SDC Mergers and Acquisitions database. We collect all domestic mergers and acquisitions announced between January 1996 and December 2018. Our starting year is for two reasons: (i) ISS coverage begins in 1996; (ii) the SDC sample is more consistent starting from 1996. Following previous literature, we require that: the acquirer is in the U.S. and is listed on the Center for Research in Security Prices (CRSP) and Compustat during the event window (i.e., Fich, Harford, and Tran, 2015). To assess changes in returns around the M&A announcements, we gain share price data from CRSP. We obtain firm-level accounting information for the control variables from Compustat. Firm controls include a set of firm characteristics recognized to influence acquisition decisions (Cai and Sevilir, 2012). We deliver a detailed explanation of each of the variables and their respective sources in Appendix A and the *Variable Description* section.

We obtain detailed information on the CEO's employment history, education information, nationality, and birthdate from BoardEx. Utilizing the Center for World University Rankings report, which lists the top universities worldwide and in specific countries, we identify CEOs' alma maters and detect whether they are the top schools in that country. Additionally, we include qualifications the CEO has earned, i.e., a graduate degree. We also utilize the fields in which CEOs have pursued their degree and focus on business and law-related studies because these are more common fields among CEOs. Specifically, we focus on the degrees obtained before the CEOs began their tenure in the company.

Following previous studies, we apply specific filtering criteria: (i) the transaction value reported on SDC is greater than $1 million; (ii) deal status is complete; (iii) the acquirer owns less than 50% of the target's stocks before the deal announcement and more than 100% of the target's stocks post announcement; (iv) the acquirer is publicly traded, and financial data available on CRSP and Compustat; (v) the acquirer and the target companies are headquartered in the U.S (i.e., Aktas et al., 2016); (vi) deal form listed on SDC is not a buyback, acquisition of partial interest or acquisition of remaining interest; (vii) financials and utility sectors are excluded; and (viii) include private, public, and subsidiary targets. After we apply all filters, the initial deal-level sample contains 14,710 observations.

3.2 Variable Descriptions

In examining the influence of CEO foreign experience on M&As, we identify three background attributes with the following binary variables *Non-American*, *Non-U.S. Education*, and *Non-U.S. Employment*; then, we combine them to capture the overall foreign exposure. *Non-American* takes the value of one for non-American CEOs, and zero otherwise. Then, we examine the countries where the CEOs received higher education degrees and gained international career experiences. The *Non-U.S. Education* variable takes the value of one for a CEO who pursued a degree outside of the United States before the deal announcement, and zero otherwise. The *Non-U.S. Employment* variable is one for a CEO who worked outside of the United States prior to the deal and zero otherwise. To capture the effect of foreign exposure, we construct an overall measure for foreign CEOs[25]. *Foreign Experience* is an indicator variable taking the value of one if the CEO has *Non-American, Non-U.S. Education, and Non-U.S. Employment*, and zero otherwise.

Next, we include three CEO characteristics that could influence M&A transactions. *CEO Age* is the CEO's age, and *Tenure* is the number of years the CEO has served at the specific firm until the year of the acquisition. *Top School* is one where the CEO had pursued a degree at the top school of his home country, and zero otherwise. In an additional analysis, following prior literature, we evaluate the field of study (*Business or Law*) as it is shown to influence a CEO's managerial decisions (Ferris, Jayaraman, and Sabherwal, 2013). King, Srivastav, and Williams (2016) find that bank CEOs with an MBA tend to take on more risk, and these banks outperform their peers. There is also evidence that CEOs are hired due to educational background. Palia (2000) suggests that firms in more regulated industries are more likely to hire CEOs with a law degree to deal with legal actions and government agencies. The *Business or Law* variable takes the value of one for a CEO with a degree in law or business, and zero otherwise. We control for the *Graduate Degree*, which takes the value of one when the CEO has obtained a graduate degree, and zero otherwise.

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[25] While this measure may not make the perfect proxy for foreign background, given the availability of the reliable data, it is useful in capturing the effect.

We incorporate a set of firm characteristics documented to affect M&A decisions (Cai and Sevilir, 2012). Firm controls are defined in the previous fiscal year and include *Firm Size* (log of total assets), *Cash Flow* (cash divided by book value of total assets), *Capital Intensity* (capital expenditures over book value of total assets), *Leverage* (sum of long-term debt and debt in current liabilities over book value of total assets), *Return on Asset* (net income over book value of total assets), *MTB* (the market value of equity over the book value of equity).

Then, we add a number of deal and firm characteristics. *Definitive Agreement* is one if there is public disclosure of a definitive agreement by the parties, and zero otherwise. *Collar* takes the value of one if the consideration offered in a stock swap is established on the acquirer's average closing share price before the deal is closed, and zero otherwise. *Merger of Equals* takes a value of zero when the bidder and target have identical market capitalization and ownership of the new firm, and zero otherwise; *Challenged Deal*, is one if an outside firm instigated an offer for the target while there was a pending bid, and zero otherwise. We include *Friendly Deal*, which refers to the recommendation of the target company's management toward the transaction; friendly deals take the value of one, while others take the value of zero. *Tender Offer* is the proposal to purchase shares of a corporation, usually at a premium above its market price, to control the target company.

Furthermore, we incorporate the target public status and the payment method in our controls. There is mixed evidence of how the payment method influences the market's reaction to the announcement of M&A deals. For instance, Moeller, Schlingemann, and Stulz (2004) and Rossi and Volpin (2004) find that the market favors cash-financed deals because of reduced information asymmetry. On the other hand, Dutta, Saadi, and Zhu (2013) and Eckbo and Thorburn (2000) state that investors choose stock-financed deals. Fuller, Netter, and Stegemoller (2002) suggest that the acquirer return is greater when the bidder offers stock for private and subsidiaries. *Stock Deal* equals unity when 100% of the deal is paid with stock and zero otherwise. *Non-Public Target* is zero when the target firm is a private firm or a subsidiary, and zero otherwise. The reason we combine private and subsidiary targets is due to the consensus in prior studies reporting that the market responds similarly to private firms and subsidiaries (Fuller, Netter, and Stegemoller, 2002; Chang, 1998). *Public Target* takes the value of one when the target is listed as a publicly traded company at SDC, and zero otherwise.

Finally, we use a set of variables to analyze the influence of acquisitions conducted by CEOs with foreign experience on Target returns and deal characteristics. *Premium* is the transaction value reported by SDC divided by the market value of the target four weeks before the announcement. *Target CAR* is the cumulative abnormal returns three-day surrounding the deal announcement. Lastly, the deal size is the natural logarithm of deal value in billions of USD.

3.3 Sample Breakdown

Table 1 presents the summary statistics of the initial dataset. Our initial analysis shows that CEOs with foreign experience make up 5.7% of the sample. The mean CEO tenure is around five years, and the average age of CEOs is 55. Only less than 1% of them have attended a top school in their respective countries. CEOs with at least a graduate degree and those with business or law-related training correspond to 68% and 55% of the acquisitions in our sample. In untabulated tests, we find that American CEOs make up a majority of the overall CEOs, while British CEOs are the next most popular nationality. Among the rest of the CEOs, Canadian (0.7%), Indian (0.6%), and Swiss (0.3%) executives make up the most common nationalities.

The initial analysis of firm characteristics is similar to those of earlier studies. For instance, the average firm size is 9.3 billion USD, and the median size is 1.6 billion USD. For 52% of the deals, public disclosure on a definitive agreement has been executed by two parties, and for less than 1% of the targets, a third party launched an offer to challenge the original bidder while the bid was pending. The percentage of friendly deals in our sample is about 99.7%. Firms that acquired another firm in the same state account for 21%, and in half of the cases, both the bidder and the target were from high-tech companies. Private targets make up approximately 62%, while public targets represent only around 9% of the deals in the sample. Cash is used 53% of the time as a payment method while stock is used 14.7% of the time in the dataset.

Table 2 reports the deal distribution of the acquirer firms per industry sector according to the Fama-French 48 (FF48) industries. Around 23% of the acquirers operate in the business services sector, 8% in electronic equipment, and around 6% in computers. The next most common sectors are transportation, retail, healthcare, and machinery. In this sample, the least common sectors are tobacco products, fabricated products, beer and liquor, and agriculture.

4. Empirical Models and Findings

In order to examine whether markets react more favorably to deals by companies having a foreign experienced CEO, we investigate the cumulative abnormal returns (CAR) to the acquirer on the deal's announcement. We use the market-adjusted returns model to estimate the CAR over the three-day window (-1, +1) surrounding the deal announcement, where day zero is the announcement date reported in the SDC database. The proxy for the market is the value-weighted returns from CRSP.

4.1 Announcement Returns

We estimate the following OLS regression of bidder cumulative abnormal returns three-day window surrounding the day of the announcement:

$$CAR_{i,t} = \alpha_1 + \alpha_2 Foreign\ Experience_{i,t} + CEO\ Controls_{i,t} + \eta_{i,t-1} + \alpha_{d,t} + \phi_t + \delta_i + \varepsilon_{i,t} \quad (1)$$

The dependent variable, $CAR_{i,t}$ is the cumulative abnormal return for firm i around the day of the deal announcement in year t. It is calculated over the day before and the day after the announcement day, which is reported as the deal date in the SDC Platinum Database. To measure the announcement returns, we attain the returns on the CRSP value-weighted index. The primary variable of interest is $Foreign\ Experience_{it}$ which takes the value of one when the CEO has a foreign nationality, overseas education, and work experience. $CEO\ Control_{i,t}$ represents *CEO Tenure*, *CEO Age*, *Top School*, and the firm controls, $\eta_{i,t-1}$, defined in the previous fiscal year, are *firm size*, *cash flow*, *capital intensity*, *leverage*, *ROA*, and *MTB*. Deal controls, $\alpha_{d,t}$, include *Definitive Agreement*, *Collar*, *Challenged Deal*, *Merger of Equals*, *Friendly deal, Tender offer, Public target*, and *Stock deal*. We also control the same state deals and whether both the acquirer and target are in the high technology firms. We include year-fixed effects, $\phi_{t,}$ to control for timeinvariant effects; and industry-fixed effects, δ_i, defined at the 3-digit SIC level, to control for systematic differences in the tendency of firms across various industries to conduct mergers and acquisitions. We also include standard errors clustered at the firm level.

Table 3 presents the univariate analysis of CARs of a two-sample t-test for the CEO and deal-related characteristics. In this table, we provide results of t-tests of whether the average abnormal returns for samples (foreign experienced and traditional CEOs) are distinct. Results for the three-day window show that firms led by traditional CEOs are realizing 0.7% announcement returns on average. *Foreign Experience* (non-U.S. nationality, non-U.S. work, and education history) realize an average of 2.9% returns. Baseline results indicate that companies earn higher announcement returns when the CEO has foreign experience. Univariate analysis in Table 3 also reports that when a U.S. firm acquires a public target, the average return is -1.1%, and when it acquires a non-public firm (private or subsidiary) the mean return is 1%. Firms that pay with 100% stock realize around 0.6% higher return, but the effect is not significant.

Next, we estimate the main OLS regression in model (1) and report the findings in Table 4 for cumulative abnormal returns companies realize around the announcements of acquisitions with U.S. targets. Column (1) demonstrates the results without the covariates and column (2) shows the results with all the covariates. When U.S. firms with CEOs possessing foreign experience, the bidder's abnormal returns increase by 3.4%, which is significant at the 1% level[26]. Consequently, the market’s response to deals conducted by CEOs with foreign exposure is positive and significant. The coefficients of the control variables are in line with prior studies. For example, the larger the firm size, the lower the returns get, and U.S. firms acquiring public targets realize around 3% lower announcement returns.

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[26] Our results are robust to restricting the analyses to only CEO international education and employment experience.

One of the potential reasons for this positive reaction could be the CEOs’ broader perspective and strategic thinking. Having experience in different countries, internationally experienced managers may possess a broader perspective which can help them identify potential synergies, evaluate risks, and make more informed decisions during M&A transactions. Another potential reason could be that foreign experience often requires managers to adapt to new environments, languages, and cultures. This adaptability can be beneficial when navigating the complexities and uncertainties associated with M&A transactions.

Our finding is consistent with that of Giannetti, Liao, and Yu (2015), who find that the “brain gain” effect of boards with diverse backgrounds and experiences gained via living in different countries brings distinct perspectives and unique knowledge to their teams. When acquiring or merging with another firm, these skills help CEOs better manage the new entity created and encourage employees to adapt to the new environment. Additionally, CEOs may learn business opportunities and new governance practices abroad; hence, they are more likely to bring unique analytical skills and expertise to their decisions, especially as two entities with distinct corporate cultures and practices merge. Furthermore, being relatively disenfranchised from local ties, CEOs with foreign backgrounds may have stronger motivations to pursue stakeholders’ long-term benefits rather than act on their familiarity biases that increase the likelihood of hometown acquisitions (Jiang et al., 2018). Investors expect reduced friction in the negotiation process. Shareholders may perceive international CEOs as conducive to firms’ cultural diversity and understanding and expect the merging process to be smoother.

4.2 Robustness and Endogeneity Tests

The preliminary evidence suggests that firms with CEOs possessing foreign experience realize significantly higher abnormal returns. However, endogeneity could explain these results. First, we address issues related to omitted variables bias with Oster's δ. Next, we conduct a placebo test to address concerns related to findings potentially correlated with firms and the announcement returns.

Oster's δ denotes the degree of selection on unobservables regarding observables that would be necessary to justify the results by omitted variable bias entirely. A δ estimate greater than one suggests that the results are not motivated by unobservables, and the higher the delta value, the lower the concern about the presence of critical omitted variable bias. Following Oster (2019), we conduct a test for omitted variable bias in Table 5. We find the delta estimate to be 36.498, which denotes that the impact of omitted variables in our model has to be at least 36 times more potent than that of the observables in order for the *Foreign Experience* to lose its significance. Hence, the results survive the Oster test for potential omitted variable bias.

In order to further verify the robustness of the baseline results in Table 4, we conduct a placebo test. We begin by randomly assigning foreign experience (zero or one) to each bidder CEO based on the initial proportion of foreign experiences in the sample. Using the placebo foreign experience, we re-estimate the model in Table 4 with a complete set of CEO, firm, deal, and target controls, recording the coefficient and the significance levels each time. After repeating this process 500 times, we report the mean β for *Foreign Experience* in Table 6. The placebo *Foreign Experience* variable should not be significant if the baseline results come from the CEO's foreign background rather than firm-specific characteristics. The coefficient is -0.002 and is not significantly related to cumulative announcement returns. Additionally, we find that it is significant at the 5% level for only around 4% of the time. Therefore, the placebo test further provides evidence to validate the initial findings suggesting that foreign background provides CEOs with particular skills and sophistication to successfully create significantly higher abnormal returns during the announcement of deals.

4.3 Channels

Our main findings suggest a significant association between the CEOs' foreign experience and deal outcomes. In this subsection, we further examine the potential channels of value creation, and we re-estimate the model (1) by interacting the *Foreign Experience* with the target status and payment method. The results of this extended model with interaction terms are reported in Table 7. Models in Panel A are conducted for the full sample, and those in Panel B are regressed on the subset of the non-public target. The coefficient on the foreign background variable remains positive and significant in all columns, and the findings are consistent with those reported in the primary regression (Table 4).

Panel A column (1) presents the results of regressing the announcement CAR on *Foreign Experience*, *Public Targets*, the interaction between these two variables, and the controls. The coefficient of *Foreign Experience* is positive, and the coefficient of interaction is negative and statistically significant at the 1% level. Consistent with the prior literature which reports that announcement returns for acquiring firm is significantly lower for public firms (i.e., Fuller et al., 2002), we find a negative relationship between the public targets and the realized returns when a CEO with foreign experience conducts the deal.

The method of payment also plays a crucial role in M&A deals. The interaction between the CEO foreign experience and payment method suggests that the interaction coefficient of foreign background and stock deal is positive. When firms with foreign CEOs engage in stock deals, they gain higher returns. The coefficient on *Stock Deal* is negative and significant, consistent with earlier research indicating that the deals paid for in stock are generally viewed negatively. Nevertheless, the coefficient on the interaction between *Stock Deal* and *Foreign Experience* is positive and significant. The interactions for cash and combo deals are negative, and only the combo deal, where stock and cash are used as a payment method, is significant.

There are potential reasons why bidder shareholders gain when buying a private or subsidiary but lose when buying a public firm. First, private firms and subsidiaries are more challenging to purchase and trade when compared to public firms. Hence, the sellers are more likely to accept a discounted offer. In other words, this reduced liquidity makes private and subsidiary targets less attractive and valuable than comparable, more liquid targets. The bidder captures this discount in purchasing the private or subsidiary firms. Second, since there's no set value for private firms in the market, the valuation is more complicated. Here, foreign experience CEOs' negotiation power and confidence in judging the value of the target comes into play. Living in another country to pursue a degree or a career opportunity, and surviving in a new system could boost a CEO's confidence in his decision-making. For this reason, foreign experienced CEOs may be more likely to acquire such targets, and their firms realize a significantly higher return at the announcement. Additionally, since the bidder has less information about private and subsidiaries, these targets are harder to value; the bidder should make a stock offer to share the risk of the new entity by providing ownership to the target company (Hansen, 1987). As seen in the table, investors react more positively to this shared risk in the new entity.

Next, as demonstrated in Table 7 Panel B, we analyze the interaction of foreign backgrounds with the payment method in a subset of non-public targets. We find that when foreign experienced CEOs conduct stock deals, the bidder returns significantly increase, and when he conducts cash deals, the returns significantly decrease. My findings are in line with those of Fuller, Netter, and Stegemoller (2002) and there are three potential explanations for why stock deals are value-enhancing and cash deals are not. The first is the tax implications to target when it is purchased with stock rather than cash. When private firms are paid with cash, they face tax consequences immediately. However, if the owners of the target firm are paid stock in exchange for their ownership rights, the tax implications are deferred. Second is the monitoring advantage that comes with stock deals. Private firms are closely held, and the likelihood of block holder formation increases when stock is offered. The target firm's opportunity to own stocks of the new entity formed after the merger allows for better monitoring of the bidder's management. When bidders use stock rather than cash to purchase a non-public target, they receive higher returns. Overall, if the monitoring and ownership rights are valuable for the targets, they may accept a lower price for the firm. This discounted payment is reflected in the higher acquirer returns for stock deals.

The findings indicate that acquirers' foreign experienced CEOs bring higher abnormal returns when compared to traditional CEOs. Moreover, foreign experienced CEOs choose private and subsidiary targets rather than public firms and prefer to pay with stock. The following substantial question is how the target company is affected. In Table 8, we analyze the amount of premium paid to targets, the target firm's abnormal returns in the three-day surrounding the deal announcement, and the deal size. CEOs possessing foreign experience pay approximately 36 million USD less when acquiring a firm. Although, in general, targets' CARs significantly increase in M&A deals, the firms acquired by these particular CEOs realize lower returns. Additionally, the foreign experienced CEOs conduct larger deals, as shown in column (3). Results are consistent with our previous findings and potential explanations. As better negotiators and more confident valuators, foreign CEOs pay less premium. This is reflected in the target company's CARs; hence, CEOs bring value to the acquirer shareholders.

The findings in Tables 7 and 8 suggest that the observed gains on the announcement of deals by U.S. firms with foreign experienced CEOs are mainly from purchasing private and subsidiary targets rather than public firms and paying them with stock instead of cash and in a combination of the two. Foreign CEOs' bargaining power, skills in valuations, and confidence in their judgment play a crucial role in paying lower premiums to target firms.

4.3 "Cream Rises to the Top" Phenomenon

In this section, we explore an alternative explanation for the synergistic benefits associated with CEOs who have international experience, commonly known as the "cream rises to the top" phenomenon. This metaphor suggests that the most talented and skilled individuals naturally excel and achieve success. There might be concerns that CEOs with foreign experience are inherently among the most accomplished and capable individuals in their home countries, and their success may not be directly linked to their international exposure. The quality of education is a significant factor, as graduates from top-tier schools often represent the highest-performing individuals. Therefore, we incorporate the *Top School* variable in our primary regression analysis to account for the influence of these CEOs.

Additionally, we address the aforementioned concerns by conducting a separate analysis that compares the education quality of CEOs in their home countries and the U.S. We aim to determine if the impact arises from CEOs with international experience being the most gifted and adept individuals in their home countries. We make this comparison by removing the U.S.-educated executives from the sample and dividing it into two subsets: CEOs from countries with high-quality education providers like the U.S. (e.g., Canada, Australia, and European countries) and those from countries without comparable educational opportunities. If the main findings in this study are not due to the "cream rises to the top" phenomenon, we would observe positive and significant coefficients in both subsets of the sample. This would indicate that the value brought to firms by CEOs with international experience is not solely due to their inherent talent, intelligence, or the quality of education they received in their home country. Instead, it would suggest that their foreign experience contributes to the value they bring to their companies. Our findings in Table 9 suggest that, regardless of education quality, CEOs with comprehensive foreign experience contribute value to their respective firms.

Lastly, as an additional robustness test, we analyze the influence of foreign CEOs on deal announcements by investigating the impact of alternative CAR windows. As in Table 10, the influence of the CEO's foreign background on CARs is qualitatively consistent and significant across the three-day and five-day announcement windows. However, the influence of the announcement loses its impact on company returns over longer periods. It supports the three-day window selection and removes any bias related to the CAR window we selected in our examinations.

5. Conclusion

We examine the association between the foreign experience of CEOs and performance in U.S. mergers and acquisitions. Our results reveal that companies led by CEOs with foreign experience realize significantly higher market reactions during the three-day window surrounding the deal announcement. To address potential endogeneity issues arising from unobserved confounding factors, we employ Oster's δ method and observe a high value, suggesting that our findings are highly resistant to omitted variable bias. Additionally, we perform a placebo test to address concerns regarding spurious correlations linked to other firm or executive characteristics and the announcement returns. Our results reinforce that CEOs’ foreign experience is likely to be the primary driving factor behind our findings.

We investigate various potential channels through which CEOs with diverse experience may enhance acquirer shareholder value in the context of domestic mergers and acquisitions. Our findings indicate that value creation is associated with the acquisition of private and subsidiary targets rather than public firms, as well as selecting stock-based payments rather than cash or a combination of both. We also find that these CEOs pay lower premiums and target cumulative announcement returns decrease during acquisitions. These results suggest that CEOs with foreign experience demonstrate heightened sophistication in selecting optimal targets, negotiating lower premiums, and bringing synergy to the acquirer firm.

We also address concerns related to the “cream rises to the top” phenomenon and determine that the robust market reaction is not solely attributable to the inherent skills and education quality of CEOs. Instead, the CEO's foreign experience plays a significant role in driving the results. Since foreign-experienced CEOs are less likely to be influenced by home-state or birthplace biases, their incentives may be better aligned with those of investors. This characteristic may facilitate better target selections and valuations. Furthermore, overcoming substantial challenges in a foreign country and system contributes to the development of these executives’ skills and talents. As a result, these CEOs become more resilient, confident in their judgment, and negotiate more effectively which contributes to value enhancement in domestic acquisitions.

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Appendix A: Variable Definitions

Variable	Definition
CEO Characteristics (Source: BoardEx)	
Foreign Experience	=1 if the CEO has a non-U.S. nationality, education, and work experience; = 0 otherwise.
CEO Age	The natural logarithm of CEO's age.
CEO Tenure	The natural logarithm of the CEO's tenure at the deal announcement.
Top School	= 1 if the CEO has obtained a higher education degree from one of the top schools in his country; = 0 otherwise.
Graduate Degree	= 1 if the CEO has obtained a graduate degree; = 0 otherwise.
Business or Law Degree	= 1 if the CEO has a degree in business or law; = 0 otherwise.
Deal and Target Characteristics (Source: SDC)	
Public Target	= 1 if the target firm is publicly listed; = 0 otherwise.
Non-Public Target	= 1 if the target firm is listed as private or subsidiary; = 0 otherwise.
Stock Deal	= 1 if 100% of the acquisition is paid with stock; = 0 otherwise.
Cash Deal	= 1 if 100% of the acquisition is paid with cash; = 0 otherwise
Combo Deal	= 1 if the acquisition is paid with stock and cash; = 0 otherwise
Friendly Deal	= 1 if the deal's attitude is labeled as "Friendly" in SDC; = 0 otherwise.
Definitive Agreement	= 1 if there is public disclosure that the parties have executed a definitive agreement; = 0 otherwise.
Collar	= 1 if the consideration offered in a stock swap transaction is based on a set range determined by the acquirer's average closing stock price before the close of the deal; = 0 otherwise.
Challenged Deal	= 1 if a third party launched an offer for the target while the original bid was pending; = 0 otherwise.
Merger of Equals	= 1 when the target and acquirer consider their merger a merger of equals, indicating approximately equal market capitalization and ownership of the new entity; = 0 otherwise.
Premium	The transaction value reported by SDC divided by the market value of the target four weeks before the deal announcement.
Target CAR	The cumulative abnormal returns three days surrounding the deal announcement.
Deal Size	The natural logarithm of deal value in billions of dollars.
Firm Characteristics (Source: Compustat)	
Firm Size	Log of Total Assets.
Capital Intensity	Capital expenditure over book value of total assets.
Leverage	The sum of long-term debt and debt in current liabilities over the book value of total assets.
Cash Flow	Cash and cash equivalent holdings over book value of total assets.
ROA	Net income over book value of total assets.
MTB	The market-to-mook ratio is the market value of a firm's equity divided by the book value of equity.

Table 1: Summary Statistics

Variable	Mean	Median	Std. Dev.	N
CEO Characteristics				
Foreign Experience	0.057	0	0.232	14,710
CEO Age	55.09	55	7.802	14,691
CEO Tenure	5.249	4	5.33	14,710
Top School	0.008	0	0.09	14,436
Business or Law	0.546	1	0.498	14,457
Graduate Degree	0.682	1	0.466	14,457
Firm Characteristics				
Firm Size	9,333.87	1,643.41	22,014.98	14,697
Capital Intensity	0.043	0.030	0.045	14,583
Leverage	0.232	0.215	0.185	14,634
Cash Flow	0.152	0.085	0.168	14,694
ROA	0.038	0.054	0.106	14,693
MTB	3.734	2.693	4.241	14,533
Deal and Target Characteristics				
Definitive Agreement	0.523	1	0.499	14,710
Collar	0.007	0	0.083	14,710
Challenged Deal	0.004	0	0.064	14,710
Merger of Equals	0.000	0	0.022	14,710
Friendly Deal	0.997	1	0.054	14,669
Tender Offer	0.021	0	0.143	14,710
Same State	0.208	0	0.406	14,710
Both High-tech	0.508	1	0.500	14,710
Public Target	0.088	0	0.283	14,710
Non-Public Target	0.912	1	0.283	14,710
Stock Deal	0.147	0	0.355	5,364
Cash Deal	0.538	1	0.499	5,364
Combo Deal	0.315	0	0.465	5,364

Table 2: Deal Distribution of Acquirer Firms per Industry

This table reports the deal distribution of the acquirer firms per industry sector. The 48 Industry sectors are based on the Fama-French Industry Sector Classification.

Acquirer Industry	N	%
Agriculture	21	0.14
Food Products	232	1.58
Candy & Soda	77	0.52
Beer & Liquor	23	0.16
Tobacco Products	7	0.05
Recreation	95	0.65
Entertainment	100	0.68
Printing and Publishing	174	1.18
Consumer Goods	193	1.31
Apparel	96	0.65
Healthcare	794	5.40
Medical Equipment	523	3.56
Pharmaceutical Products	450	3.06
Chemicals	374	2.54
Rubber and Plastic Products	122	0.83
Textiles	27	0.18
Construction Materials	337	2.29
Construction	214	1.46
Steel Works Etc.	239	1.63
Fabricated Products	16	0.11
Machinery	697	4.74
Electrical Equipment	204	1.39
Automobiles and Trucks	138	0.94
Aircraft	235	1.60
Shipbuilding, Railroad Equipment	28	0.19
Defense	68	0.46
Precious Metals	14	0.10
Non-Metallic and Industrial Metal Mining	52	0.35
Coal	22	0.15
Petroleum and Natural Gas	454	3.09
Communication	548	3.73
Personal Services	138	0.94
Business Services	3389	23.05
Computers	910	6.19
Electronic Equipment	1302	8.85
Measuring and Control Equipment	502	3.41
Business Supplies	142	0.97
Shipping Containers	48	0.33
Transportation	220	1.50
Wholesale	725	4.93
Retail	570	3.88
Restaurants, Hotels, Motels	150	1.02
Almost Nothing	34	0.23
Total	14,704	100.00

Table 3: Univariate Analysis of CARs

We provide results of two sample t-tests of whether the mean abnormal returns for samples are different for the three-day announcement window.

Variable	N		Mean		Difference	St. Err
	(a)	(b)	(a)	(b)	(a) - (b)	
Foreign Experience (a) Others (b)	828	13,644	0.029	0.007	0.022***	0.005
Public Target (a) Non-Public Target (b)	1,280	13,192	-0.011	0.010	-0.021***	0.004
Stock Deal (a) Others (b)	4,532	783	0.011	0.005	0.006	0.005
Cash Deal (a) Others (b)	2,455	2,860	0.009	0.011	-0.002	0.004
Combo Deal (a) Others (b)	3,643	1,672	0.010	0.011	-0.001	0.004

Table 4: Acquirer Announcement Returns

This table presents the results of the OLS regression analysis in equation (1). The dependent variable is the cumulative abnormal return for acquiring firm *i* around the day of the deal announcement in year *t*. The CAR is measured over the three days (-1, +1) surrounding the announcement date in the SDC Platinum database. We provide results for when the CEO has all three foreign background characteristics (*Foreign Experience*). All financial variables are winsorized at the 1% and 99% levels. All variable definitions are in Appendix A. We control for year, and 3-digit SIC-level industry fixed effects, and standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed acquisitions by U.S. firms from January 1996 to December 2018.

Table 4

	CAR (-1, +1)	
	(1)	(2)
Foreign Experience	0.027***	0.034***
	(5.48)	(3.39)
CEO Age		0.011
		(0.66)
CEO Tenure		-0.004*
		(-1.72)
Top School		-0.040*
		(-1.72)
Firm Size		-0.004**
		(-2.50)
Capital Intensity		-0.126**
		(-2.31)
Leverage		0.020
		(1.30)
Cash Flow		0.012
		(0.77)
ROA		-0.023*
		(-1.80)
MTB		0.006*
		(1.76)
Definitive Agreement		0.004
		(0.74)
Collar		-0.003
		(-0.17)
Challenged Deal		0.018
		(0.77)
Merger of Equals		0.011
		(0.16)
Friendly Deal		0.012
		(0.39)
Tender Offer		0.012
		(1.12)
Same State		-0.004
		(-0.67)
Both High-tech		-0.006
		(-0.98)
Public Target		-0.030***
		(-4.73)
Stock Deal		-0.003
		(-0.42)
Constant	0.007***	-0.012
	(6.02)	(-0.17)
Adj. R-squared	-0.0050	-0.0074
N	14,452	4,570

Table 5: Test for Omitted Variable Bias

This table presents the results of the omitted variables test for the regression test in Table 4. The CAR is measured over the three days (-1, +1) surrounding the announcement date in the SDC Platinum database. Following the method proposed by Oster (2019), we investigate the importance of unobservables. This estimation strategy generates an upper bound for the R-squared, called the Rmax, which is 1.3 times the R-squared in specifications controlling for observables. Oster δ calculates the proportion of the explanatory power of omitted factors relative to the included observable interest variable essential to wipe out the impact of the interest variable. The cutoff point is one, and when Oster δ >1, unobservables do not drive the results in the main regression (Table 4).

	CAR (-1, +1)
Coefficient	0.071***
R-squared	(0.1077)
Oster δ	36.498

Table 6: Placebo Test for Random Assignment of Foreign Background Across CEOs

This table presents the estimates of a placebo test where the CEO foreign experience variable is randomly assigned across CEOs. Then, the model in Table 4 is regressed 500 times, and each time the β and the significance of the coefficients are recorded. The average β for Foreign Experience and the percentage of the time this coefficient was significant at the 5% level are reported in this table. In the model, the dependent variable is the cumulative abnormal return for acquiring firm *i* around the day of the deal announcement in year *t*. The CAR is measured over the three days (-1, +1) surrounding the announcement date in the SDC Platinum database. We provide results for when the CEO has all three foreign background characteristics *(Foreign Experience)*. All financial variables are winsorized at the 1% and 99% levels. All variable definitions are in Appendix A. We control for year, and 3-digit SIC-level industry fixed effects, and standard errors are clustered at the firm level. The sample contains completed acquisitions by U.S. firms from January 1996 to December 2018.

	CAR (-1, +1)
Mean β for Foreign Experience	-0.002
% (β >0 at 5%)	[3.53%]
Controls (Table 4)	Yes
Year F.E.	Yes
Industry F.E.	Yes

Table 7: CEO Foreign Experience, Target Public Status, and Payment Methods

This table reports the coefficients of the OLS regression for the association between Foreign Experience and cumulative abnormal returns, conditional on the target public status and the payment method. The CAR is measured over the three days (-1, +1) surrounding the announcement date in the SDC Platinum database. Panel A presents the regression estimates for the full sample, and Panel B presents them for the non-public target firms. A non-public target takes the value of one when the target is a private firm or a subsidiary. Stock is a *Stock Deal* and takes the value of one when the deal is paid with equity entirely. Cash represents a *Cash Deal* and takes the value of one when the deal is paid with cash entirely. Combo represents a *Combo Deal* taking the value of one when the deal is paid with stock and cash. The main predictor variable, *Foreign Experience*, is an indicator variable that takes the value of one if the CEO has all three foreign background characteristics (Non-American, Non-U.S. Education, Non-U.S. Employment), and zero otherwise. All other variables are defined in Appendix A. All financial variables are winsorized at the 1% and 99% levels. We control for year, and industry (defined at the 3-digit SIC level) fixed effects, and standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7 Panel A: Full Sample

	CAR (-1, +1)			
	Public Target	Stock Deal	Cash Deal	Combo Deal
	(1)	(2)	(3)	(4)
Foreign Experience # Public Target	-0.056***			
	(-2.60)			
Foreign Experience # Payment Method		0.232***	-0.054***	-0.067***
		(8.44)	(-2.78)	(-3.29)
Foreign Experience	0.050***	0.000	0.061***	0.055***
	(4.26)	(0.03)	(4.31)	(4.57)
Public Target	-0.027***			
	(-4.12)			
Payment Method	-0.003	-0.021***	0.009	0.002
	(-0.45)	(-2.74)	(1.64)	(0.45)
CEO Age	0.011	0.021	0.009	0.009
	(0.68)	(1.20)	(0.55)	(0.52)
CEO Tenure	-0.004*	-0.005*	-0.005*	-0.004*
	(-1.67)	(-1.77)	(-1.81)	(-1.66)
Top School	-0.040*	-0.060***	-0.048**	-0.042*
	(-1.74)	(-2.58)	(-2.09)	(-1.83)
Firm Size	-0.004**	-0.005***	-0.005***	-0.005***
	(-2.56)	(-3.34)	(-3.60)	(-3.42)
Capital Intensity	-0.124**	-0.112**	-0.116**	-0.115**
	(-2.28)	(-1.98)	(-2.13)	(-2.12)
Leverage	0.019	0.017	0.021	0.021
	(1.26)	(1.05)	(1.35)	(1.36)
Cash Flow	0.011	0.009	0.010	0.010
	(0.73)	(0.57)	(0.65)	(0.69)
ROA	-0.022*	-0.025*	-0.021*	-0.020
	(-1.78)	(-1.94)	(-1.65)	(-1.57)
MTB	0.006*	0.008**	0.006*	0.005*
	(1.77)	(2.34)	(1.85)	(1.69)
Definitive Agreement	0.004	-0.000	-0.001	-0.001
	(0.77)	(-0.02)	(-0.14)	(-0.22)
Collar	-0.003	-0.017	-0.018	-0.020
	(-0.18)	(-1.01)	(-1.11)	(-1.21)
Challenged Deal	0.017	0.011	0.009	0.009
	(0.74)	(0.46)	(0.40)	(0.39)
Merger of Equals	0.010	0.013	-0.002	-0.008
	(0.14)	(0.18)	(-0.02)	(-0.12)
Friendly Deal	0.013	0.008	0.015	0.010
	(0.40)	(0.26)	(0.49)	(0.31)
Tender Offer	0.013	-0.006	-0.009	-0.009
	(1.20)	(-0.61)	(-0.90)	(-0.93)
Same State	-0.004	-0.002	-0.003	-0.003
	(-0.71)	(-0.43)	(-0.56)	(-0.60)
Both High-tech	-0.006	-0.008	-0.005	-0.007
	(-0.96)	(-1.33)	(-0.77)	(-1.03)
Constant	-0.015	-0.038	-0.004	0.006
	(-0.20)	(-0.49)	(-0.06)	(0.09)
Adj. R-squared	-0.0060	-0.0064	-0.0108	-0.0103
N	4,570	4,529	4,570	4,570

Table 7 Panel B: Non-Public Targets

	CAR (-1, +1)		
	Stock Deal	Cash Deal	Combo Deal
	(1)	(2)	(3)
Foreign Experience # Payment Method	0.363***	-0.088***	-0.079***
	(9.65)	(-3.45)	(-3.02)
Foreign Experience	0.004	0.096***	0.079***
	(0.31)	(5.12)	(4.86)
Payment Method	-0.006	-0.001	0.003
	(-0.64)	(-0.14)	(0.49)
CEO Age	0.011	0.009	0.008
	(0.53)	(0.44)	(0.39)
CEO Tenure	-0.005*	-0.006*	-0.006*
	(-1.69)	(-1.91)	(-1.77)
Top School	-0.075**	-0.056*	-0.048
	(-2.42)	(-1.81)	(-1.55)
Firm Size	-0.004**	-0.004**	-0.005**
	(-2.26)	(-2.31)	(-2.54)
Capital Intensity	-0.140**	-0.137**	-0.133**
	(-2.15)	(-2.08)	(-2.01)
Leverage	0.006	0.009	0.008
	(0.30)	(0.48)	(0.43)
Cash Flow	0.004	0.011	0.013
	(0.23)	(0.61)	(0.71)
ROA	-0.032**	-0.034**	-0.035**
	(-2.10)	(-2.26)	(-2.33)
MTB	0.006	0.006	0.005
	(1.51)	(1.52)	(1.35)
Definitive Agreement	0.008	0.008	0.009
	(1.32)	(1.24)	(1.32)
Collar	0.034	0.029	0.030
	(0.73)	(0.61)	(0.63)
Challenged Deal	0.023	0.021	0.005
	(0.29)	(0.26)	(0.07)
Merger of Equals	0.170	0.162	0.162
	(0.78)	(0.74)	(0.73)
Friendly Deal	0.009	0.017	0.007
	(0.19)	(0.33)	(0.14)
Tender Offer	-0.027	-0.027	-0.027
	(-0.24)	(-0.24)	(-0.24)
Same State	-0.003	-0.003	-0.004
	(-0.44)	(-0.45)	(-0.54)
Both High-tech	-0.009	-0.012	-0.008
	(-1.17)	(-1.47)	(-1.03)
Constant	-0.001	0.000	0.013
	(-0.01)	(0.00)	(0.13)
Adj. R-squared	0.0048	-0.0199	-0.0209
N	3,530	3,530	3,530

Table 8: Target Announcement Returns, Premium, and Deal Size

This table presents the results of an OLS regression analysis where the dependent variable in column (1) is the premium paid to the target firm, and column (2) is the cumulative abnormal return for the target firm around the day of the deal announcement in year *t*. The CAR is measured over the three days (-1, +1) surrounding the announcement date in the SDC Platinum database. We provide results for the acquirer CEO with all three foreign background characteristics (*Foreign Experience*). All financial variables are winsorized at the 1% and 99% levels. All variable definitions are in Appendix A. We control for year, firm, and 3-digit SIC-level industry fixed effects, and standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed acquisitions by U.S. firms from January 1996 to December 2018.

Table 8

	Premium	Target CAR	Log (Deal Size)
	(1)	(2)	(3)
Foreign Experience	-36.607**	-0.062*	0.444**
	(-2.08)	(-1.80)	(2.22)
CEO Age	-0.936	-0.001	-0.009*
	(-1.36)	(-0.54)	(-1.79)
CEO Tenure	0.213	-0.006**	-0.007
	(0.32)	(-2.48)	(-1.20)
Firm Size	2.869	0.007	0.639***
	(0.43)	(0.88)	(14.54)
Capital Intensity	-7.938	-0.303	-0.609
	(-0.07)	(-1.35)	(-1.00)
Leverage	-35.975	-0.067	0.818***
	(-1.20)	(-1.00)	(4.15)
Cash Flow	38.058	-0.041	-0.415**
	(1.03)	(-0.51)	(-2.02)
ROA	20.109	0.015	-0.279*
	(0.58)	(0.12)	(-1.93)
MTB	6.946	-0.021	0.191***
	(1.61)	(-0.75)	(5.21)
Collar	13.351	-0.009	0.778***
	(1.23)	(-0.28)	(4.63)
Challenged Deal	7.153	-0.104**	0.654***
	(0.65)	(-2.30)	(3.12)
Merger of Equals	-12.095	-0.165***	2.000***
	(-0.56)	(-2.84)	(3.67)
Friendly Deal	16.290	0.124*	-0.387
	(0.75)	(1.79)	(-1.49)
Tender Offer	11.768*	0.111***	-0.416***
	(1.68)	(4.11)	(-4.20)
Both High-tech	7.303	-0.004	0.371***
	(0.68)	(-0.17)	(6.91)
Public Target			1.448***
			(25.14)
Constant	42.969	0.242	-0.290
	(0.73)	(1.59)	(-0.61)
Adj. R-squared	0.0596	0.0647	0.4903
N	559	1,087	6,431

Table 9: The Partitioning of Education Countries and Acquirer Returns

This table presents the results of the OLS regression analysis in Table 4. We subset the data based on the foreign experienced CEO's education country by excluding the U.S. education from the data. In columns (1) and (2), we estimate the regression for CEOs who have acquired their higher education degree from Europe, Canada, or Australia. In columns (3) and (4), we estimate the regression for CEOs who have acquired their higher education degree from other countries not in the previous subset. In columns (1) and (3), we estimate the regression without the controls in Table 4. The dependent variable is the cumulative abnormal return for acquiring firm *i* around the day of the deal announcement in year *t*. The CAR is measured over the three days (-1, +1) surrounding the announcement date in the SDC Platinum database. We provide results for when the CEO has all three foreign background characteristics *(Foreign Experience)*. All financial variables are winsorized at the 1% and 99% levels. All variable definitions are in Appendix A. We control for year and 3-digit SIC-level industry fixed effects, and standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed acquisitions by U.S. firms from January 1996 to December 2018.

Table 9

	CAR (-1, +1)			
	Other Countries		Europe/Canada/Australia	
	(1)	(2)	(3)	(4)
Foreign Experience	0.089***	0.115*	0.046**	0.189***
	(2.87)	(1.84)	(2.29)	(3.07)
CEO Age		0.214		0.624**
		(0.92)		(2.52)
CEO Tenure		-0.053		-0.078**
		(-1.51)		(-2.53)
Top School		-0.089		0.035
		(-0.79)		(0.26)
Business or Law		-0.024		0.054
		(-0.34)		(0.82)
Graduate Degree		0.007		0.015
		(0.09)		(0.22)
Firm Size		-0.010		-0.014
		(-0.53)		(-0.81)
Capital Intensity		0.150		-0.504
		(0.21)		(-0.73)
Leverage		0.105		0.072
		(0.52)		(0.36)
Cash Flow		0.195		0.355*
		(1.22)		(1.83)
ROA		-0.124*		-0.293*
		(-1.74)		(-1.84)
MTB		-0.015		-0.060
		(-0.45)		(-1.55)
Definitive Agreement		0.083		0.059
		(1.35)		(0.98)
Collar		-0.023		0.075
		(-0.09)		(0.36)
Challenged Deal		0.055		-0.035
		(0.20)		(-0.15)
Friendly Deal		0.012		0.193
		(0.05)		(0.45)
Tender Offer		0.034		0.002
		(0.28)		(0.02)
Same State		-0.067		-0.026
		(-1.22)		(-0.48)
Both High-tech		-0.195**		-0.189***
		(-2.45)		(-2.72)
Public Target		-0.061		-0.037
		(-0.83)		(-0.54)
Stock Deal		0.146*		0.089
		(1.80)		(1.14)
Constant	-0.012	-0.687	-0.004	-2.443**
	(-0.75)	(-0.75)	(-0.48)	(-2.17)
Adj. R-squared	-0.0155	-0.0863	-0.0328	-0.0236
N	1,153	364	1,186	384

Table 10: Robustness Test for Acquirer Returns around Alternate Windows

This table presents the results of the OLS regression analysis in Table 4 with alternative CAR windows. The dependent variable is the cumulative abnormal return for acquiring firm *i* around the day of the deal announcement in year *t*. The CAR is measured over the five days (-2, +2) and seven days (-3, +3) surrounding the announcement date in the SDC Platinum database. We provide results for when the CEO has all three foreign background characteristics *(Foreign Experience)*. All financial variables are winsorized at the 1% and 99% levels. All variable definitions are in Appendix A. We control for year, and 3-digit SIC-level industry fixed effects, and standard errors are clustered at the firm level. T-statistics are in parentheses below each estimate. *, **, ***, denote significance at the 10%, 5%, and 1% levels, respectively. The sample contains completed acquisitions by U.S. firms from January 1996 to December 2018.

Table 10

	CAR (-1, +1)	CAR (-2, +2)	CAR (-3, +3)
	(1)	(2)	(3)
Foreign Experience	0.034***	0.017*	0.010
	(3.39)	(1.93)	(1.19)
CEO Age	0.011	0.002	-0.001
	(0.66)	(0.12)	(-0.06)
CEO Tenure	-0.004*	-0.002	-0.001
	(-1.72)	(-1.02)	(-0.64)
Top School	-0.040*	-0.032	-0.030
	(-1.72)	(-1.61)	(-1.60)
Firm Size	-0.004**	-0.004***	-0.004***
	(-2.50)	(-2.94)	(-3.64)
Capital Intensity	-0.126**	-0.127***	-0.149***
	(-2.31)	(-2.69)	(-3.40)
Leverage	0.020	0.018	0.014
	(1.30)	(1.39)	(1.11)
Cash Flow	0.012	-0.000	-0.012
	(0.77)	(-0.02)	(-0.98)
ROA	-0.023*	-0.002	-0.002
	(-1.80)	(-0.16)	(-0.20)
MTB	0.006*	0.005*	0.008***
	(1.76)	(1.96)	(3.11)
Definitive Agreement	0.004	0.004	0.003
	(0.74)	(0.83)	(0.73)
Collar	-0.003	0.001	-0.002
	(-0.17)	(0.09)	(-0.14)
Challenged Deal	0.018	0.015	0.012
	(0.77)	(0.73)	(0.66)
Merger of Equals	0.011	0.035	0.011
	(0.16)	(0.58)	(0.20)
Friendly Deal	0.012	0.012	-0.004
	(0.39)	(0.44)	(-0.16)
Tender Offer	0.012	0.014	0.014
	(1.12)	(1.50)	(1.57)
Same State	-0.004	-0.002	0.002
	(-0.67)	(-0.44)	(0.43)
Both High-tech	-0.006	-0.004	-0.001
	(-0.98)	(-0.72)	(-0.23)
Public Target	-0.030***	-0.030***	-0.027***
	(-4.73)	(-5.41)	(-5.39)
Stock Deal	-0.003	-0.005	-0.007
	(-0.42)	(-0.86)	(-1.13)
Constant	-0.012	0.024	0.053
	(-0.17)	(0.38)	(0.88)
Adj. R-squared	-0.0074	0.0001	0.0059
N	4,570	4,570	4,570