

The Association between Expected Synergies and Post-Acquisition Performance in Cross-Border Mergers and Acquisitions

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ABSTRACT

We investigate whether the relation between expected synergies and post-acquisition performance differs between cross-border M&As and domestic M&As. Managers may, on average, fail to accurately estimate synergies resulting from cross-border M&As because of geographical, cultural, and institutional factors, or because of the greater difficulty to forecast integration costs *ex post*. Alternatively, managers may engage in cross-border deals only if they perceive that they can accurately estimate synergies. We use goodwill resulting from the transaction to measure expected synergies. Using a sample of M&As completed by US acquirers, we show that, relative to domestic goodwill, cross-border goodwill is positively associated with increasing post-acquisition operating performance, sales growth, stock returns, and Tobin's q . In addition, we find that cross-border acquirers are less likely to impair goodwill in the year following the acquisition. We also document that, among cross-border acquirers, firms that complete acquisitions in more culturally and institutionally distant countries relative to the US, exhibit a lower association between expected synergies and change in operating performance and are more likely to impair goodwill. Our findings suggest that managers forecast accuracy follows an "inverted U curve" function of the institutional and cultural distance relative to the US.

Keywords: Cross-border mergers and acquisitions; synergy; goodwill; post-acquisition performance

1. Introduction

Conceptually, mergers and acquisitions (M&As) are driven by management's expectation of "synergies"; two firms will merge if combining their operations increases value as assessed by acquiring firms' managers. However, synergies are difficult to assess ex ante and managers may engage in M&As for other motives. For example, prior research indicates that managerial hubris (e.g., Roll 1986; Seth, Song, and Pettit 2000; Baker, Ruback, and Wurgler 2007) and managerial private benefits (e.g., Jensen 1986; Harford and Li 2007) are two explanations for value-destroying acquisitions. In this study, we exploit an accounting rule regarding purchase price allocation to examine the relation between management's estimation of synergies and post-acquisition performance related to domestic and cross-border M&As.

FAS 141 (FASB 2001a, 2007), which became effective in 2002, requires management to allocate the purchase price of the target to the net fair value of acquired assets through purchase price allocation after completion of the acquisition.¹ Goodwill, which is the excess of the purchase price over the net fair value of acquired assets, reflects the expected synergies resulting from the transaction. Goodwill is a "plug in" number and mechanically subsumes any overpayment. Consequently, any overestimated synergies lead to a greater proportion of the purchase price being allocated to goodwill. Since 2002, under FAS 142, goodwill is no longer amortized but is instead tested for impairment at least annually (FASB 2001b). Purchase price allocation (PPA) offers an opportunity to directly observe management's expectations of synergies resulting from M&A activity. It is particularly interesting given that management's internal forecasts are typically unavailable (Goodman, Neamtiu, Shroff, and White 2014).

Relative to domestic M&As, cross-border M&As are associated with an additional set of factors that could potentially affect the value created (or destroyed) through the combination. Cultural, institutional, and/or geographical distances increase the cost of due diligence before the combination and make the integration of the target firm more complex after completion of the deal (e.g., Ahern, Daminelli, and Fracassi 2015). Institutional, corporate governance, and accounting differences across countries can also impede value creation in cross-border M&As (e.g., the acquisition of Autonomy by HP in 2011 that led HP to recognize a massive write-down of goodwill in 2012,² one year after completion of the deal). However, imperfect

¹ FAS 141 eliminated the "pooling of interests" accounting treatment for M&As for which no goodwill was disclosed. FAS 141 is now included in the Accounting Standards Codification (ASC) 805, *Business Combinations*.

² See <http://aswathdamodaran.blogspot.fr/2012/11/hps-deal-from-hell-mark-it-up-and-write.html> (Last retrieved: September 29, 2015).

integration of capital markets (e.g., investors' domestic bias, appreciation of currencies), exchange of technologies, strong complementarities, and growth potential of foreign economic areas also create opportunities for bidders to purchase targets in different countries at attractive valuation levels.

In this study, we examine whether and how the relation between managers' expectations of synergies and post-acquisition performance differs between domestic and cross-border M&As. Since goodwill captures the amount of expected synergies, we investigate the nature of goodwill resulting from domestic and cross-border M&As. Whether managers are more or less able to forecast synergies from cross-border than from domestic deals is a priori unclear. In order to complete a relatively more complex cross-border transaction, managers may be more likely to (either intentionally or unintentionally) overestimate synergies such that goodwill actually captures overpayment and is negatively related to the future performance of the combined entity. Institutional and cultural distances of the target firm may also prevent managers from accurately forecasting synergies. Conversely, given the increased complexity of cross-border deals, acquirers may engage in cross-border M&As only when they expect to be able to accurately forecast synergies resulting from the combination. The hurdle of probable "expected synergies" needed to engage in M&As may be higher for cross-border business combinations relative to domestic combinations. As explained by Ahern et al. (2015), "mergers that do occur between culturally distant countries are likely to have stronger unobservable fundamentals in order to overcome the burden of additional integration costs." Similarly the hurdle of confidence in forecasted synergies may be higher for cross-border deals than for domestic deals. In this case, the amount allocated to goodwill in cross-border deals will be more positively associated with future performance relative to domestic deals. Therefore, the accuracy of expected synergies, and hence the nature of goodwill resulting from cross-border M&As, is a priori unclear and worthy of empirical examination. Accordingly, we address the following research question: Do managers forecast synergies for cross-border M&As more (less) accurately than they do for domestic M&As? We reason that if managers' forecasts are more (less) accurate, then the association between expected synergies and post-acquisition performance should be stronger (weaker) for cross-border M&As than for domestic M&As.

We use a sample of M&As with goodwill disclosure to address this research question. We investigate the association between expected synergies and acquirers' post-acquisition performance and assess whether the association between goodwill and future performance differs between domestic and cross-border M&As. A positive (negative) difference in the

association between cross-border goodwill vs. domestic goodwill and post-acquisition operating performance would indicate that the former captures more synergies (overpayment) relative to domestic goodwill. To corroborate our findings, we also examine the relative association between cross-border goodwill, and post-acquisition sales growth, stock returns, and Tobin's q . Next, we investigate differences in the likelihood of goodwill impairment in the first year following completion of the transaction between domestic and cross-border M&As. Goodwill write-downs booked shortly after completion of an acquisition tend to signal overpayment, i.e., that synergies have been overestimated (e.g., the HP-Autonomy deal above-mentioned or, more recently, the Microsoft-Nokia deal).³ We also explore whether cultural and institutional distance between the acquirer and target firms is related to the ability of acquirers to forecast expected synergies.

We conduct our analysis on a sample of 2,006 business combinations completed by US acquirers between 2008 and 2013. Our empirical analysis yields the following findings. We document that, relative to domestic goodwill, cross-border goodwill is incrementally positively associated with the change in operating performance, measured by the change in industry-adjusted ROA from the year prior to completion of the acquisition (stand-alone entity) to the year after completion of the acquisition (combined entity).⁴ We also find an incremental positive association between cross-border goodwill, and the change in sales growth from the year prior to the year following completion of the transaction, post-acquisition stock returns, and post-acquisition Tobin's q . Together these results indicate that estimated synergies in cross-border deals are more positively associated with increases in firm performance than estimated synergies in domestic M&As. They suggest that, on average, managers are more accurate in estimating synergies in cross-border deals relative to domestic deals. In addition, we find that cross-border acquirers are less likely to impair goodwill in the year following completion of the acquisition than are domestic acquirers, corroborating the greater accuracy of estimated synergies in cross-border M&As.

We also assess whether cultural and institutional distance from the target country relates to managers' ability to accurately forecast expected synergies. Even if managers may, on average, better forecast synergies in cross-border deals, managers are likely to be affected by the incremental difficulty of forecasting synergies in some cross-border deals. The accuracy of expected synergies depends on managerial incremental efforts and the additional difficulties for cross-border deals. Drawing on prior literature (e.g., Erel, Liao, and Weisbach 2012;

³ See <http://blogs.wsj.com/cfo/2015/07/09/microsoft-write-down-stokes-valuation-concerns/> (Last retrieved: September 29, 2015).

⁴ We find similar results using change in performance two years after completion of the transaction.

Ahern et al. 2015; Francis, Huang, and Khurana Forthcoming), we perform factor analysis on several cultural and institutional dimensions, including the differences between the US and the target firms' countries in the four dimensions of culture developed by Hofstede (2001),⁵ differences between local GAAP and US GAAP, legal origin of the target country (common or code law), language (English or other), economic development (GDP per capita), and level of trust. We find that acquirers that complete cross-border acquisitions in more culturally and institutionally distant countries, exhibit a lower association between cross-border goodwill and post-acquisition performance than acquirers that complete acquisitions in less distant countries. We also document that acquirers of targets in more culturally and institutionally distant countries are more likely to impair goodwill in the year following completion of the transaction. This is consistent with the argument that cultural and institutional differences in some transactions exceed management's additional efforts to accurately forecast expected synergies. Together these findings suggest that managers forecast accuracy follows an "inverted U curve" function of the institutional and cultural distance relative to the US.

We contribute to the literature on M&As and international business in several ways. As noted by Reuer, Shenkar, and Ragozzino (2004, p. 21), research on international M&As, while growing, has not been as voluminous as the large body of research on both domestic M&As and international alliances. This is somewhat surprising because M&As have been a major channel for internationalization in recent years. Past studies have investigated the determinants of cross-border transactions (e.g., Chen 2008; Erel et al. 2012; Ahern et al. 2015) or their effects on acquirers' post-acquisition performance (e.g., Lowinski, Schiereck, and Thomas 2004; Nadolska and Barkema 2007; Gubbi, Aulakh, Ray, Sarkar, and Chittoor 2010). Our study extends that prior research by focusing on the accuracy of management's expected synergies across domestic and cross-border M&As. Ahern et al. (2015) document that investors' expect less synergies for M&As involving firms from culturally distant countries. We extend this line of research by identifying one factor that may explain why investors expect less synergies in more culturally and institutionally distant countries, i.e., because of the difficulty of accurately forecasting synergies by management. Our study also contributes to the literature on management forecasting ability and the quality of capital investment decisions (Hirst, Koonce, and Venkataraman 2008; Goodman et al. 2014). In particular Goodman et al. (2014) argue that management draws on similar skills to forecast earnings for market participants as it does to forecast performance in making investment decisions. They document that management's ability to forecast earnings is positively related

⁵ The four dimensions are power distance, individualism, masculinity and uncertainty avoidance.

to good investment decisions such as M&As and capital expenditures. We extend this research by exploring management's ability to forecast synergies in an international setting with a direct measure of management's forecasts. We contribute to the literature examining the quality of acquisitions and determinants of goodwill impairments (Hayn and Hughes 2006; Gu and Lev 2011; Goodman et al. 2014). We also complement other studies that examine the relevance and information content of disclosures about domestic business combinations and purchase price allocations, in particular Kimbrough (2007), Shalev (2009) and Paugam, Astolfi, and Ramond (2015). These studies investigate the informativeness of purchase price allocations that involve fair value estimation of acquired assets and liabilities after a business combination and other disclosures provided in financial statements about business combinations. We add to this literature by showing how well goodwill, which reflects expected synergies, relates to the change in performance in the context of cross-border M&As.

Finally, we conduct our analyses on a sample of transactions of mostly private target firms, which allows us to obtain a considerably larger sample (2,006 transactions) than those used in previous studies. For example, Shalev, Zhang, and Zhang (2013), Paugam et al. (2015), and Zhang and Zhang (Forthcoming) conduct analyses on samples of public target firms involving respectively 320, 308 and 137 transactions. Our dataset allows us to conduct more powerful tests using a much larger sample that is more representative of M&A transactions (Capron and Shen 2007).⁶

The remainder of this paper is organized as follows. We review the related literature in Section 2, develop the hypotheses in Section 3, present our empirical strategy in Section 4, report our findings in Section 5, and conclude the study in Section 6.

2. Related research

2.1 DETERMINANTS OF CROSS-BORDER MERGERS & ACQUISITIONS

Prior research shows that several country-specific and firm-specific dimensions affect the likelihood and intensity of cross-border M&As. For example, Erel et al. (2012) find that geographic proximity, quality of accounting disclosure, and bilateral trade activity increase the likelihood of mergers between two countries. Francis et al. (Forthcoming) also present evidence that GAAP proximity between countries is an important factor affecting the

⁶ A limitation is that our dataset does not include target-specific and deal-specific variables as these variables are generally unavailable for private firms; therefore, we are unable to explicitly control for differences in these variables in our models.

frequency and magnitude of cross-border M&As. From a legal point of view, Rossi and Volpin (2004) study the determinants of M&As around the world by focusing on differences in laws and regulation across countries. They find that the volume of M&A activity is significantly larger in countries with better accounting standards and stronger shareholder protection. Ahern et al. (2015) extend past studies by presenting evidence of the importance of several key dimensions of culture, i.e., trust, hierarchy, and individualism, for merger volume across countries and the effects on synergy gains.

Chen, Huang, and Chen (2009) investigate the effects on the likelihood of cross-border M&As of several firm-specific factors. Using a sample of takeover bids in nine East Asian economies, they find that size, cash holdings, cross-listing on foreign exchanges, development of capital markets, and governance proxies are significantly and positively associated with cross-border M&As relative to domestic M&As. From a governance standpoint, Ferreira, Massa, and Matos (2010) find that foreign institutional ownership is positively associated with the intensity of cross-border M&A activity worldwide. Ferris, Jayaraman, and Sabherwal (2013) examine the role of CEO overconfidence in explaining international mergers and acquisitions during the period 2000–2006. They find that CEO overconfidence is related to a number of critical aspects of international merger activity.

2.2 CONSEQUENCES OF CROSS-BORDER MERGERS & ACQUISITIONS

A key issue surrounding cross-border M&As is whether they create value (Reuer et al. 2004, p. 21). Several studies investigate investors' reactions to cross-border M&A announcements (e.g., Aybar and Ficici 2009; Gubbi et al. 2010; Ahern et al. 2015) or long-term post acquisition performance (e.g., Black, Carnes, Jandik, and Henderson 2007; Dutta and Jog 2009).⁷ Denis, Denis, and Yost (2002) find that global diversification is associated with a valuation discount equivalent to that applied to industrial diversification. Moeller and Schlingemann (2005) provide corroborative evidence of lower average performance for cross-border acquirers relative to domestic acquirers.

Black et al. (2007) examine the relationship between the quality of the foreign target's accounting disclosures and acquirer long-term abnormal returns. The authors find that US acquirers in cross-border mergers experience significantly lower long-term post-merger abnormal returns than acquirers of domestic targets. Dutta and Jog (2009) investigate the long-term stock return performance of Canadian acquiring firms in the post-acquisition

⁷ Some studies focus on the value creation to the acquirer of the acquisition of specific cross-border target type. Jory and Ngo (2014) examine the decision of private sector enterprises from developed countries to acquire state-owned enterprises (SOEs) abroad. The authors find that bidders of SOE fare worse than bidders of non-SOE both in terms of stock price and operating performance.

period. Contrary to stylized facts reported in US studies, they neither find negative long-term abnormal stock market returns once they account for methodological discrepancies nor do they find negative long-term operating performance for acquirers in the period following an acquisition. They document that the Canadian market reacts positively to acquisition announcements but corrects for this reaction within a short period of time. Overall they find that Canadian acquisitions do not show value destruction or overpayment.

Other studies have focused on the value creation of M&As completed by emerging country acquirers. Aybar and Ficici (2009) document that, on average, cross-border expansions of emerging-market multinationals through acquisitions do not create value; instead, they destroy value for more than half of the transactions studied. Gubbi et al. (2010) investigate acquisitions by Indian firms, and examine whether overseas acquisitions by emerging-economy firms create value for acquirers. The authors predict and find that the magnitude of value created is higher when the target firms are located in advanced economic and institutional environments, i.e., in country markets with higher quality of resources, and therefore, stronger complementarities to the existing capabilities of emerging economy firms.

Another line of research investigates if and how various factors affect the long-term success of cross-border M&As. Capron (1999) examines how post-acquisition asset divestiture and resource redeployment affect the long-term performance of horizontal acquisitions. Overall, the results indicate that both asset divestiture and resource redeployment can contribute to acquisition performance, albeit with a significant risk of damaging acquisition performance when the divested assets and redeployed resources are those of the target. Chakrabarti, Gupta-Mukherjee, and Jayaraman (2009) analyze the impact of culture on post M&A performance. Using a sample of over 800 cross-border acquisitions during 1991-2004, the authors find that, contrary to general perception, cross-border acquisitions perform better in the long run if the acquirer and the target come from countries that are culturally more disparate. Conversely, Ahern et al. (2015), using an event study around cross-border M&A announcements, find that greater cultural distances in trust and individualism are negatively associated with combined announcement returns. Francis, Hasan, Sun, and Waisman (2014) ask whether managers can learn from observing the actions of other acquiring firms to make better acquisition decisions. They use a sample of cross-border M&As conducted by US acquirers in developing countries and document a positive and significant relationship between an acquirer's performance and its predecessor's acquisition activity.

3. Hypotheses

Managers engaging in cross-border M&As may overestimate the amount of synergies resulting from the transaction for several reasons. First, the costs associated with due diligence are higher *ex ante*, due to institutional, cultural and geographical distances of the target firm. Purchasing a target in a different cultural and institutional environment is more complex and may lead to managers overlooking several risk factors likely to impede value creation. Second, once the acquisition is completed, the integration of a foreign target is also likely to be more challenging and more difficult to predict. Managers of the acquiring firm may struggle to control and monitor a foreign organization after completion of the transaction. In this case, expected synergies may not be accurately forecasted by managers. Therefore, goodwill, which captures managers' estimates of expected synergies from cross-border M&As, is likely to be negatively associated with future performance of the combined entity relative to goodwill resulting from domestic M&As. Managers could, on average, overestimate synergies resulting from cross-border deals.

Conversely, it is also possible that managers engage in more visible cross-border deals only if they are sufficiently confident in their ability to forecast synergies accurately. Anecdotal evidence suggests that purchasing a foreign company is likely to place the CEO at risk of turnover (both HP and Microsoft CEOs were replaced after the failed acquisitions of Autonomy and Nokia). Managers may exert stronger efforts to forecast synergies for cross-border M&As than for domestic M&As. This would lead managers to forecast synergies more accurately for cross-border deals relative to domestic deals or to engage only in combinations for which they have high confidence in the estimated synergies. In other words, conditional on the M&A being completed, expected synergies for cross-border deals could be more accurate than domestic expected synergies. Additionally, if management is able to overcome legal or other institutional factors impeding cross-border M&As, cross-border deals could lead to high potential for value creation. Differences in growth potential of developing countries relative to developed countries and stronger complementarities offer opportunities to create value. If this is the case, goodwill resulting from cross-border transactions will be incrementally positively associated with future performance relative to goodwill resulting from domestic transactions.

The above discussion indicates that there are plausible reasons supporting both a stronger and a weaker positive association between cross-border goodwill and future performance relative to domestic goodwill. Accordingly, we state our hypothesis in the null form as follows:

H1: The relation between goodwill resulting from M&A transactions and the change in post-acquisition performance does not differ between cross-border and domestic M&A transactions.

Under US GAAP, goodwill is tested for impairment at least once a year. According to FAS 142 (ASC 350), an impairment loss must be recognized if the reporting unit's total fair value to which goodwill has been allocated is less than its book value (FASB 2001b). Cross-border deals for which management overestimates synergies are more likely to result in recognizing goodwill impairment shortly after completion of the transaction. Impairment of goodwill is management's acknowledgement that synergies have been overestimated. If management's estimation of synergies is relatively more accurate for cross-border deals than for domestic deals, then cross-border acquirers are less likely to impair goodwill post-acquisition. Alternatively, if cross-border acquirers are less accurate in forecasting synergies for cross-border deals, then they are more likely to impair goodwill after the acquisition. Therefore, we test the following hypothesis (stated in the null form):

H2: The likelihood of goodwill impairment post-acquisition does not differ between cross-border and domestic acquirers.

The accuracy of expected synergies may be increasing for cross-border deals for which managers' additional efforts exceed the additional difficulties to forecast synergies whereas it is likely to decrease for cross-border deals for which the additional difficulties exceed managers' additional efforts. Past literature documents that cultural and institutional distance are important factors affecting the frequency of cross-border M&As and the synergies created in such transactions (e.g., Erel et al. 2012; Ahern et al. 2015; Francis et al. Forthcoming). We hypothesize that cross-border acquirers' ability to forecast synergies is also likely to be affected by cultural and institutional distance between the acquirer's and the target's countries. We expect that, among cross-border acquirers, management's ability to forecast synergies is lower for targets in more culturally and institutionally distant countries. Therefore, we test the following hypotheses:

H3a: The association between goodwill and post-acquisition performance is weaker for cross-border deals of targets in more culturally and institutionally distant countries.

H3b: The likelihood of goodwill impairment post-acquisition is greater for M&As involving acquirers and target firms from more culturally and institutionally distant countries.

4. Empirical strategy

4.1 THE NATURE OF GOODWILL AND GENERAL EMPIRICAL STRATEGY

After 2002, following the completion of a business combination, acquirers must allocate the purchase price to the target's identifiable tangible and intangible assets and liabilities based on their individually estimated fair values (FASB 2001a). The difference between the purchase price and the total fair value of net identifiable assets is then allocated to goodwill. Goodwill is a composite asset that reflects (1) expected synergies between assets within the target firm (internally generated goodwill), which include the performance and growth opportunities of the target as a stand-alone entity, (2) expected synergies between the acquirer and the target resulting from the combination, and (3) potential overpayment for the target firm (Johnson and Petrone 1998; Henning, Lewis, and Shaw 2000; Zanoni 2009). We use the amount of goodwill resulting from the purchase price allocation as a proxy for management's expectation of synergies. Any overestimation of expected synergies created through the combination will therefore inflate goodwill and weaken its association with post-acquisition performance.

Our general empirical strategy is presented in Figure 1. We examine the consequences of estimated synergies (goodwill) on the change in performance from year $t-1$, i.e., the performance of the acquirer prior to completion of the transaction, to year $t+1$, i.e., the performance of the combined entity after completion of the transaction. We explore multiple dimensions of performance: change in industry-adjusted ROA, change in sales growth, post-acquisition stock returns, post-acquisition acquirer Tobin's q (H1), and likelihood of goodwill impairment (H2).

[Insert Figure 1 About Here]

4.2 ASSOCIATION BETWEEN GOODWILL RESULTING FROM CROSS-BORDER MERGERS & ACQUISITIONS AND POST-ACQUISITION PERFORMANCE

First, we examine differences in the association between expected synergies resulting from cross-border versus domestic deals and future changes in operating performance using the OLS model (1):

$$\begin{aligned}
\Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t \\
& + b_3 GDWL_PPA_t * CrossBorder_t + b_4 Materiality_t + b_5 SIZE_{t-1} \\
& + b_6 \Delta SALE_{t; t+1 \text{ or } t+1; t+2} + b_7 RET_t + b_8 RET_{t+1} + b_9 MTB_{t-1} \\
& + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\
& + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_{t-1; t} + b_{17} TAX \\
& + b_{18} UNEMP_t + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t
\end{aligned} \tag{1}$$

where (t is the acquisition year):

$\Delta ROA_{t-1; t+1}$ = industry-mean-adjusted ROA (EBITDA divided by lagged total assets) one year after completion of the transaction minus industry-mean-adjusted ROA one year before completion of the transaction (COMPUSTAT). Industry is defined as 2-digit SIC code;⁸

$\Delta ROA_{t-1; t+2}$ = industry-mean-adjusted ROA (EBITDA divided by lagged total assets) two years after completion of the transaction minus industry-mean-adjusted ROA one year before completion of the transaction (COMPUSTAT). Industry is defined as 2-digit SIC code;

$GDWL_PPA_t$ = goodwill resulting from the transaction divided by purchase price (ppanalyser.com);

$CrossBorder$ = 1 if the target firm's home country is different from the acquirer's home country, and 0 otherwise (ppanalyser.com);

$Materiality_t$ = Purchase price divided by the acquirer's total assets in $t-1$ (ppanalyser.com and COMPUSTAT);

$SIZE_{t-1}$ = natural logarithm of the acquirer's total assets at the end of the fiscal year prior to completion of the transaction (COMPUSTAT);

$\Delta SALE_{t; t+1 \text{ or } t+1; t+2}$ = change in acquirer's sales one year after completion of the transaction (from t to $t+1$). Alternatively, we use the average change in sales in the two years following completion of the transaction if $\Delta ROA_{t-1; t+2}$ is used as the dependent variable (COMPUSTAT).

RET_t = acquirer's stock return in the fiscal year after completion of the transaction. (we also include RET_{t+1} if $\Delta ROA_{t-1; t+2}$ is used as the dependent variable) (COMPUSTAT);

MTB_{t-1} = acquirer's year-end market-to-book ratio of equity in the year prior to completion of the transaction;

⁸ Past studies usually measure ROA in $t-1$ using the asset-weighted ROA of the acquirer and target firms. Since in our sample most target firms are private, we do not have information on target firms' ROA and therefore focus on the change in ROA for the acquirer.

- LEV_{t-1} = acquirer's long-term debt plus current portion of long-term debt in the fiscal year prior to completion of the transactions divided by lagged total assets (COMPUSTAT);
- ROA_{t-1} = industry-mean-adjusted ROA (EBITDA divided by lagged total assets) one year before completion of the transaction (COMPUSTAT). Industry is defined as 2-digit SIC code;
- $GDWL_Ac_{t-1}$ = goodwill in the acquirer's balance sheet in the year prior to completion of the transaction divided by lagged total assets (COMPUSTAT);
- $\ln(Frequent)_{t-1}$ = natural logarithm of number of acquisitions completed by the acquirer between the beginning of the sample period and t-1 (ppanalyser.com);
- $Public_t$ = 1 if the target firm is public, and 0 otherwise (infinancials.com);
- $\Delta GDP_{t-1,t}$ = GDP growth rate of the target country in year t (World Bank);
- TAX = Corporate income tax rate of the target country measured in 2011 (from KPMG corporate tax rate table or E&Y 2013 Corporate Tax Worldwide Corporate Tax Guide);
- $UNEMP_t$ = Unemployment rate of the target country expressed as a percentage of the total labor force according to the definition of the international labor organization (World Bank).

The main coefficient of interest is b_3 , which measures the incremental association of cross-border goodwill over domestic goodwill with the change of operating performance from pre- to post-acquisition. A positive b_3 estimate indicates that, relative to domestic goodwill, cross-border goodwill is more synergistic and is incrementally positively associated with increasing future performance of the combined entity. Coefficient b_1 measures the association of domestic goodwill with the change in operating performance from pre- to post-acquisition. Coefficient b_2 estimates the difference in operating performance between cross-border and domestic deals when goodwill is zero.⁹ We also conduct a similar analysis for the change in operating performance between year $t-1$ and year $t+2$ ($\Delta ROA_{t-1; t+2}$) (two years after completion of the acquisition) because synergies can take time to be realized (e.g., Goodman et al. 2014).

We control for several factors that are likely to affect the acquirer's change in performance: relative size of the transaction ($Materiality_t$), whether the transaction involves a public or a private target ($Public_t$), firm size ($SIZE_{t-1}$), change in sales ($\Delta SALE_{t+1}$), news

⁹ As goodwill is generally different from 0 in our sample, coefficient b_2 cannot be directly interpreted. Therefore we do not draw empirical conclusions from b_2 in models including interactions between $GDWL_PPA$ and $CrossBorder$. Our main coefficient of interest is b_3 , i.e., the incremental accuracy of cross-border goodwill.

affecting firm value over t (and $t+1$ for $\Delta ROA_{t-1; t+2}$) (RET_t, RET_{t+1}),¹⁰ market-to-book ratio of equity (MTB_{t-1}), leverage (LEV_{t-1}), level of industry-adjusted ROA in year $t-1$ (ROA_{t-1}), change in industry adjusted ROA prior to the transaction ($\Delta ROA_{t-2; t+1}$), amount of goodwill in the acquirer's balance sheet at $t-1$ ($GDWL_Ac_{t-1}$), and the natural logarithm of the number of acquisitions completed by the acquirer between the beginning of the sample period and year t ($\ln(Frequent_t)$). We also include GDP growth (ΔGDP), corporate income tax rate (TAX), and unemployment rate ($UNEMP_t$) of the target country to control for major macroeconomic differences of the target country, as well as year and industry fixed effects. In all our models we cluster standard errors by acquirers since the same acquirer can complete several M&As.

Second, we investigate the differences in the association between expected synergies resulting from cross-border versus domestic deals and change in sales growth using the OLS model (2):

$$\begin{aligned} \Delta SALE_{t-1; t+1} \text{ or } \Delta SALE_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t & (2) \\ & + b_3 GDWL_PPA_t * CrossBorder_t + b_4 Materiality_t + b_5 SIZE_{t-1} \\ & + b_6 RET_t + b_7 RET_{t+1} + b_8 MTB_{t-1} + b_9 LEV_{t-1} + b_{10} ROA_{t-1} \\ & + b_{11} \Delta SALE_{t-2; t-1} + b_{12} GDWL_Ac_{t-1} + b_{13} \ln(Frequent)_t \\ & + b_{14} Public_t + b_{15} \Delta GDP_{t-1;t} + b_{16} TAX + b_{17} UNEMP_t \\ & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

where (t is the acquisition year):

$\Delta SALE_{t-1; t+1}$ = sales in the year following completion of the transaction minus sales in the year prior to completion of the transaction scaled by lagged total assets (COMPUSTAT);

$\Delta SALE_{t-1; t+2}$ = sales two years following completion of the transaction minus sales in the year prior to completion of the transaction scaled by lagged total assets (COMPUSTAT);

$\Delta SALE_{t-2; t-1}$ = sales one year prior to completion of the transaction minus sales two years prior to completion of the transaction scaled by lagged total assets (COMPUSTAT).

The other variables are as previously defined.

The main coefficient of interest is b_3 , which measures the incremental association of cross-border goodwill over domestic goodwill with future sales growth following completion of the transaction. A positive estimated coefficient b_3 indicates that, relative to domestic goodwill, cross-border goodwill is incrementally associated with future sales growth (revenue

¹⁰ Because stock returns capture news faster than earnings we include a lag between stock returns and change in ROA.

enhancement synergies). In addition to controlling for the same factors as above that are likely to affect sales growth, we also control for past sales growth (acquirer sales growth before the transaction).

Third, we investigate the differences in the association between expected synergies resulting from cross-border versus domestic deals and future stock returns using the OLS model (3):

$$\begin{aligned}
 RET_{t+1} \text{ or } ARET_{t+1} = & b_0 + b_1GDWL_PPA_t + b_2CrossBorder_t & (3) \\
 & + b_3GDWL_PPA_t * CrossBorder_t + b_4Materiality_t + b_5SIZE_{t+1} \\
 & + b_6MTB_{t+1} + b_7LEV_{t+1} + b_8ROA_{t+1} + b_9\Delta ROA_{t; t+1} + b_{10}\ln(Frequent)_t \\
 & + b_{11}Public_t + b_{12}\Delta GDP_{t-1; t} + b_{13}TAX + b_{14}UNEMP_t \\
 & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t
 \end{aligned}$$

where (t is the acquisition year):

RET_{t+1} = acquirer stock return one year after completion of the transaction (COMPUSTAT);

$ARET_{t+1}$ = acquirer stock return one year after completion of the transaction minus average stock return of COMPUSTAT firms for the same year (COMPUSTAT);

$\Delta ROA_{t; t+1}$ = acquirer change in ROA (EBITDA divided by lagged total assets) in year $t+1$ (COMPUSTAT).

The other variables are as previously defined.

The main coefficient of interest is b_3 , which measures the incremental association of cross-border goodwill over domestic goodwill with future stock returns during the year following completion of the transaction. A positive estimated coefficient b_3 indicates that, relative to domestic goodwill, cross-border goodwill is associated with realized synergies that positively affect firm value.

We control for several factors that could affect stock returns such as the materiality of the transaction ($Materiality_t$), firm size ($SIZE_{t+1}$), market-to-book (MTB_{t+1}), leverage (LEV_{t+1}), operating performance (ROA_{t+1}), change in operating performance ($\Delta ROA_{t; t+1}$), as well as the number of acquisitions completed by the acquirer ($\ln(Frequent)_t$), target firm public/private status ($Public_t$), target firm countries' macroeconomic variables ($\Delta GDP_{t-1; t}$, TAX , $UNEMP_t$), and year and industry fixed effects.

Fourth, we investigate the difference in the association between expected synergies resulting from cross-border versus domestic deals and post-acquisition acquirer Tobin's q using the OLS model (4):

$$\begin{aligned}
 TQ_{t+1} = & b_0 + b_1GDWL_PPA_t + b_2CrossBorder_t + b_3GDWL_PPA_t * CrossBorder_t & (4) \\
 & + b_4Materiality_t + b_5SIZE_{t+1} + b_6\Delta SALE_{t; t+1} + b_7LEV_{t+1} + b_8ROA_{t+1}
 \end{aligned}$$

$$\begin{aligned}
& + b_9 CAPEX_{t+1} + b_{10} GDWL_Ac_{t-1} + b_{11} TQ_{t-1} + b_{12} \ln(Frequent)_t + b_{13} Public_t \\
& + b_{13} \Delta GDP_{t-1;t} + b_{14} TAX + b_{15} UNEMP_{t+1} \\
& + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t
\end{aligned}$$

where (t is the acquisition year):

TQ_{t+1} = acquirer Tobin's q one year after completion of the transaction, measured as market value of equity + book value of short and long-term debt scaled by total assets (COMPUSTAT);

$CAPEX_{t+1}$ = acquirer capital expenditures divided by lagged total assets (COMPUSTAT).

The other variables are as previously defined.

The main coefficient of interest is b_3 , which measures the incremental association of cross-border goodwill over domestic goodwill with the acquirer Tobin's q one year following completion of the transaction. A positive estimated coefficient b_3 indicates that, relative to domestic goodwill, cross-border goodwill is associated with realized synergies that positively affect Tobin's q .

We control for the relative size of the transaction ($Materiality_t$), which may negatively affect Tobin's q since a larger purchase price will increase the denominator of Tobin's q . We also control for acquirer size ($SIZE_{t+1}$), sales growth ($\Delta SALE_{t;t+1}$), leverage (LEV_{t+1}), capital expenditures ($CAPEX_{t+1}$), booked goodwill before the transaction ($GDWL_Ac_{t-1}$), Tobin's q before the transaction (TQ_{t-1}), number of deals completed ($\ln(Frequent)_t$), target firm public/private status ($Public_t$), GDP growth ($\Delta GDP_{t-1;t}$), tax rate (TAX) and unemployment rate ($UNEMP_t$). We also include year and industry fixed effects.

4.3 ASSOCIATION BETWEEN GOODWILL RESULTING FROM CROSS-BORDER ACQUISITIONS AND FUTURE GOODWILL IMPAIRMENT

If management overestimates the amount of synergies in cross-border M&As, goodwill is more likely to be impaired in subsequent years (H2). Therefore, we examine the association between cross-border goodwill relative to domestic goodwill and the probability of future goodwill impairment. We estimate model (5) using the logit procedure as the dependent variable is dichotomous:

$$\begin{aligned}
\Pr(DIMP_{t+1} = 1) = & b_0 + b_1 CrossBorder_t + b_2 GDWL_PPA_t + b_3 Materiality_t \\
& + b_4 DIMP_t + b_5 DIMP_{t-1} + b_6 SIZE_{t+1} + b_7 RET_{t+1} + b_8 LEV_{t+1} + b_9 ROA_{t+1} \\
& + b_{10} \Delta ROA_{t;t+1} + b_{11} \Delta SALE_{t;t+1} + b_{12} MTB_{t+1} + b_{13} MTB_{t+1} < 1 \\
& + b_{14} GDWL_Ac_{t-1} + b_{15} Public_t + b_{16} \Delta GDP_{t-1;t} + b_{17} TAX + b_{18} UNEMP_t \\
& + \text{Year fixed effects} + \text{Industry fixed effects}
\end{aligned} \tag{5}$$

where (t is the acquisition year):

$DIMP_{t+1}$ = 1 if the acquirer books goodwill impairment in year t+1 and 0 otherwise (COMPUSTAT);

$ImpPc_{t-1}$ = amount of goodwill impairment in year t-1 divided by lagged goodwill (COMPUSTAT);

$MTB_{t+1}<1$ = 1 if the acquirer's market-to-book ratio in year t+1 is below one, and 0 otherwise (COMPUSTAT).

The other variables are as previously defined.

The main coefficient of interest is b_1 , which measures the association between cross-border M&As and the likelihood of future goodwill impairment during the year following completion of the transaction.¹¹ A positive estimated coefficient b_1 would indicate that, relative to domestic acquirers, cross-border acquirers are more likely to impair goodwill in the year following completion of the transaction.

We control for known factors affecting the likelihood of impairment, such as the magnitude of goodwill resulting from the transaction ($GDWL_PPA_t$), the materiality of the transaction ($Materiality_t$), firm performance (ROA_{t+1} , RET_{t+1} , MTB_{t+1} , $MTB_{t+1}<1$), firm size ($SIZE_{t+1}$), past impairment ($DIMP_t$, $DIMP_{t-1}$), and the amount of goodwill on the acquirer's balance sheet before completion of the deal ($GDWL_Ac_{t-1}$) (e.g., Beatty and Weber 2006; Hayn and Hughes 2006; Ramanna and Watts 2012; Lobo, Paugam, Zhang, and Casta 2015). Higher firm performance is negatively associated with the likelihood of impairment, larger firms are less likely to impair goodwill, and the amount of goodwill on the balance sheet prior to completion of the deal is positively associated with the likelihood and size of future impairment. We include a dummy variable for market-to-book less than 1 because it is a strong indicator of economically impaired goodwill (e.g., Ramanna and Watts 2012; Filip, Jeanjean, and Paugam 2015). We control for leverage (LEV_{t+1}), as creditors could discipline managers and ensure assets are written-down in a timely manner. We also include a dummy variable for target public/private status ($Public_t$) and target firm countries' macroeconomic variables ($\Delta GDP_{t-1,t}$, TAX , $UNEMP_t$), year and industry fixed effects.

¹¹ We use the firm-level amount of goodwill impairment as the allocation of goodwill to reporting units is not systematically disclosed and often considered arbitrary (Watts 2003; Roychowdhury and Watts 2007; Ramanna 2008). After completion of a transaction, it is hard to distinguish newly recognized goodwill from previously acquired goodwill. Watts (2003) explains that "if there are any synergies at all among the units, then there is no meaningful way to allocate future cash flows, value, and goodwill among units."

4.4 ASSOCIATION BETWEEN EXPECTED SYNERGIES AND POST-ACQUISITION PERFORMANCE FOR CULTURALLY AND INSTITUTIONALLY DISTANT COUNTRIES

Cultural and institutional differences across countries are multidimensional and past literature on cross-border M&As indicates that variation in levels of trust, hierarchy and individualism, and differences in legal origin, GAAP, and other institutional dimensions affect the likelihood and consequences of cross-border M&As (e.g., Erel et al. 2012; Ahern et al. 2015; Francis et al. Forthcoming). Using an individual indicator of cultural or institutional differences or a naïve summation of differences can result in measurement error and incorrect regression coefficients. Factor analysis provides a parsimonious way to represent the latent cultural and institutional differences in the data. Factor analysis extracts the common variance in the observable structural measures in order to identify institutional and cultural dimensions with less measurement error than the observable structural measures. Therefore, we employ factor analysis to identify one or several factors capturing differences in culture and institutions (Harris, Petrovits, and Yetman 2015, p. 584).

For each country we measure the following differences with US cultural and institutional dimensions: the four Hofstede (2001) dimensions of culture (power distance, individualism, masculinity, and uncertainty avoidance), and differences in trust levels. We measure a country's level of societal trust by its citizens' average response to the following question in World Values Surveys (WVS): "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" (e.g., Nanda and Wysocki 2013; Bae, Kanagaretnam, and Tan 2015; Pevzner, Xie, and Xin 2015). To measure differences between US accounting standards and local GAAP, we adopt the approach of Bae, Tan, and Welker (2008), which focuses on 21 important accounting rules based on their review of the past literature and a survey of GAAP differences in 2001. Specifically, following Francis et al. (Forthcoming) we use these 21 accounting rules to derive a GAAP differences index measuring the extent of difference between US GAAP and local GAAP. We also form the following dichotomous variables for each country: whether English is the national language, and whether the origin of law is common law or code law. To capture economic differences between the US and target countries, we also include GDP per capita expressed in percentage of the US GDP per capita.

Next, we estimate model (6) on the sub-sample of cross-border acquirers to test whether the accuracy of expected synergies is related to cultural and institutional distance.

$$\begin{aligned}
\Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 High_Diff_t \\
& + b_3 GDWL_PPA_t * High_Diff_t + b_4 Materiality_t + b_5 SIZE_{t-1} \\
& + b_6 \Delta SALE_{t; t+1 \text{ or } t+1; t+2} + b_7 RET_t + b_8 RET_{t+1} + b_9 MTB_{t-1} \\
& + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\
& + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_{t-1; t} + b_{17} TAX \\
& + b_{18} UNEMP_t + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t
\end{aligned} \tag{6}$$

where (t is the acquisition year):

$High_Diff_t$ = 1 if the target country is in a culturally and institutionally distant country from the US, defined as a country with an above the median value of the first factor from the factor analysis of structural cultural and institutional dimensions, and 0 otherwise.

The other variables are as previously defined.

We include the same control variables as in model (1).

The main coefficient of interest is b_3 , which estimates the incremental association between cross-border goodwill and future performance for acquirers of targets in more culturally and institutionally distant countries over acquirers of targets in less culturally and institutionally distant countries (H3a). If management has more difficulty forecasting synergies in more culturally and institutionally distant countries, we expect the coefficient b_3 to be negative.

We also estimate model (7) on the sub-sample of cross-border acquirers to test whether the likelihood of future goodwill impairment is related to cultural and institutional distance.

$$\begin{aligned}
Pr(DIMP_{t+1} = 1) = & b_0 + b_1 Group2_t + b_2 Group3_t + b_3 Group4_t + b_4 GDWL_PPA_t \\
& + b_5 Materiality_t + b_6 DIMP_{t-1} + b_7 DIMP_{t-1} + b_8 SIZE_{t+1} + b_9 RET_{t+1} \\
& + b_{10} LEV_{t+1} + b_{11} ROA_{t+1} + b_{12} \Delta ROA_{t; t+1} + b_{13} \Delta SALE_{t; t+1} + b_{14} MTB_{t+1} \\
& + b_{15} MTB_{t+1} < 1 + b_{16} GDWL_Ac_{t-1} + b_{17} Public_t + b_{18} \Delta GDP_{t-1; t} + b_{19} TAX \\
& + b_{20} UNEMP_t + \text{Year fixed effects} + \text{Industry fixed effects}
\end{aligned} \tag{7}$$

where (t is the acquisition year):

$Group_{it(i=1,2,3,4)}$ = dummy variables based on the distribution of the first factor from the factor analysis of structural cultural and institutional dimensions. $Group1$ ($Group2$, $Group3$, $Group4$) = 1 for acquirers of a target in the fourth (third, second, first) quartile of culturally and institutionally distant countries, and 0 otherwise.

The other variables are as previously defined.

We include the same control variables as in model (4).

Acquisitions of a target in the least culturally and institutionally distant countries (*Group1*) are used as a benchmark. The main coefficients of interest are b_1 to b_3 , which estimate the incremental likelihood of future goodwill impairment for acquirers of targets in progressively more culturally and institutionally distant countries over acquirers of targets in the least culturally and institutionally distant countries, i.e., *Group1* (H3b). If management has more difficulty forecasting synergies in more culturally and institutionally distant countries, we expect coefficients b_1 to b_3 to be increasingly positive because management may have to revise expected synergies downward after completion of these acquisitions.

5. Empirical findings

5.1 SAMPLE SELECTION

FAS 141 requires firms to disclose their finalized purchase price allocation within one year of completion of M&As. In most cases, US listed firms disclose purchase price allocations in forms 10-Q or 10-K. We obtain data on 5,785 purchase price allocations from ppanalyser.com, a private data provider that collects information about transactions from regulatory filings, including detailed purchase price allocations, names and countries of acquirers and target firms. Acquirers' may be non-US firms and most target firms in the database are private firms. We merge this transaction dataset with COMPUSTAT North America using the acquirers' tickers. We delete transactions not matched, with no information on the country of the acquirer or target firm, or with missing data in COMPUSTAT. We also exclude non-US acquirers listed in the US as well as acquirers from the financial sector. The final sample comprises 2,006 business combinations completed between 2008 and 2013. By comparison, an extract from Thomson One Banker (formerly SDC) of transactions involving US public acquirers for deals completed between 2008 and 2013 with available deal values and excluding acquirers in the financial industry leads to a total of 5,515 transactions. We obtain fewer transactions from ppanalyser.com because only transactions with disclosed purchase price allocations are included in ppanalyser.com and because we require available data in COMPUSTAT.¹² Panel A of Table 1 summarizes the sample selection process.

[Insert Table 1 About Here]

Panel B of Table 1 presents the list and frequency of target firms' countries. Most target firms are domestic US firms (73.1%). The next most represented countries are the United Kingdom (5.7% of transactions), Canada (4.0% of transactions) and Germany (2.2% of

¹² Following general accounting principles, purchase price allocation disclosure is subject to the materiality threshold.

transactions). Panel C of Table 1 shows the number of deals completed each year between 2008 and 2013; it indicates that 2011 (2010) is the most (least) active year by number of completed transactions, with 25.4% (4.3%) of the total number of transactions. Panel D of Table 1 presents the list of industries according to the GICS classification of acquirers. The transactions are clustered in the Information Technology and Industrials sectors.

Table 2 presents descriptive statistics for the full sample (Panel A), and separately for domestic and cross-border deals (Panel B). We winsorize each continuous variable at its first and ninety-ninth percentiles. Panel A shows that the mean (median) purchase price is USD 344.2 million (43.3 million). The transactions are economically significant as the mean (median) materiality of transactions is 13.6% (4.7%) of the acquirer's lagged total assets. This is consistent with the fact that material M&As are more likely to result in the disclosure of purchase price allocations. Roughly 27% of the transactions are cross-border deals (539 transactions = 2,006 – 1,467) (see Table 1, Panel B).

By comparison, the mean (median) deal value in Thomson One Banker for transactions involving non-financial US public acquirers for deals completed between 2008 and 2013 is USD 291 (40 million) and includes 22% of cross-border transactions (untabulated). This suggests that our sample obtained from ppanalyser.com is fairly representative of transactions completed over the 2008-2013 period, although our sample tends to include larger deals that are more likely to result in the disclosure of PPAs.

The mean (median) amount of the purchase price allocated to goodwill is 47.3% (47.4%). This is our measure for the average synergies expected by management.¹³ The mean (median) change in industry-adjusted ROA from the year prior to completion of the transaction to the year following completion of the deal is -170 basis points (-135 basis points). The mean (median) change in sales growth from the year prior to completion of the transaction to the year following completion of the deal is 25.9% (14.5%). In the year following completion of the transaction, the mean (median) stock return is 30.6% (17.0%), the mean (median) market-adjusted return is -0.74% (-9.19%), and the mean (median) Tobin's q is 1.57 (1.28). The mean frequency of goodwill impairment in the year following completion of the transaction is 14.3%. Approximately 11.8% of transactions involve a public target firm.¹⁴

Univariate statistics presented in Panel B show that cross-border deals involve relatively smaller purchase prices (median difference of $Purchase_Price_i$ is significantly negative), tend

¹³ The magnitude of goodwill is comparable, although lower, to that documented in other studies. Henning et al. (2000), Shalev (2009) and Shalev et al. (2013) respectively report goodwill to be 57%, 59% and 59% of the purchase price on average.

¹⁴ We manually search for the names of the 2,006 target firms in www.infinancials.com to identify public firms.

to be less material to the acquirers (median difference of $Materiality_t$ is significantly negative), and involve acquirers with better post-acquisition adjusted stock returns (median difference of $ARET_{t+1}$ is larger for cross-border acquirers), higher Tobin's q (mean and median difference are positive and significant), lower post-acquisition capital expenditure (mean difference of $CAPEX_{t+1}$ is negative and significant), lower likelihood of booking goodwill impairment in the year following completion of the transaction (mean and median differences of $DIMP_{t+1}$ are negative and significant), lower sales growth prior to completion of the acquisition (mean difference of $Av\Delta SALE_{t-2;t-1}$ are negative and significant), higher market-to-book ratio (mean and median differences of MTB_{t-1} positive and significant), and lower leverage (mean difference of LEV_{t-1} is negative and significant). Acquirers of cross-border deals also tend to hold more cash (median difference of $CASH_{t-1}$ is positive and significant), complete deals more frequently (mean difference of $\ln(Frequent)_t$ is positive and significant), and are less likely to acquire a public target firm (mean difference of $Public_t$ is negative and significant). Target firms' countries for cross-border deals exhibit higher GDP growth, lower tax rates, and lower unemployment rates (mean and median are significantly different).

5.2 EXPECTED SYNERGIES RESULTING FROM CROSS-BORDER M&AS AND POST-ACQUISITION PERFORMANCE

The estimation results of model (1), which focuses on the association between expected synergies and future performance, are presented in Table 3.

[Insert Table 3 about Here]

The results in Table 3 indicate that goodwill resulting from cross-border transactions is more positively associated with change in ROA from the year prior to the acquisition to the year following the acquisition ($\Delta ROA_{t-1;t+1}$) than goodwill resulting from domestic acquisitions (b_3 is positive and significant at less than 5%, two-sided). This indicates that expected synergies resulting from cross-border deals are associated with a greater increase in operating performance relative to expected synergies resulting from domestic transactions. This result indicates that managers forecast synergies more accurately in cross-border transactions than in domestic transactions. The analysis of the change in operating performance between $t-1$ and $t+2$ ($\Delta ROA_{t-1;t+2}$) on a reduced sample of 1,495 transactions (observations in 2013 are lost due to missing data for fiscal year 2015) yields a similar conclusion; b_3 , which measures the association between expected synergies and post-acquisition performance, is positive and significant at less than 5% (two-sided).

Stock returns are positively associated with the change in ROA (significant at less than 10% or better, two-sided). The change in industry-adjusted ROA prior to completion of the

transaction ($\Delta ROA_{t-2;t-1}$) is positively associated with the subsequent change in performance (significant at less than 10% or better, two-sided). Sales growth is positively associated with the change in post-acquisition performance (significant at less than 10% or better, two-sided) and leverage is negatively associated with the change in industry-adjusted ROA (significant at less than 10% or better, two-sided).

We use model (2) to examine the association between cross-border goodwill and future sales growth. The estimation results are presented in Table 4.

[Insert Table 4 about Here]

Table 4 shows that goodwill resulting from cross-border transactions is more positively associated with the change in sales growth measured as the difference between sales growth in the year after the acquisition and the year prior to completion of the acquisition ($\Delta SALE_{t-1;t+1}$) than goodwill resulting from domestic acquisitions (b_3 is positive and significant at less than 5%, two-sided). The analysis of the change in sales growth measured two years after completion of the transaction ($\Delta SALE_{t-1;t+2}$) yields similar findings (b_3 is positive and significant at less than 10%, two-sided). To the extent that synergies are positively associated with increasing sales through revenue enhancement, this result indicates that managers are better able to forecast synergies in cross-border M&As than in domestic M&As. The relative size of the transaction ($Materiality_t$), share returns (RET_t , RET_{t+1}), and past sales growth ($\Delta SALE_{t-2;t-1}$) are positively associated with future sales growth (significant at less than 1%, two-sided). Acquirer's size is negatively associated with sales growth (significant at less than 1%, two-sided).

We use models (3) and (4) to corroborate the findings of the post-acquisition operating performance analysis with the analysis of acquirer firm value post-acquisition. We present the estimation results of models (3) and (4) in Table 5.

[Insert Table 5 about Here]

Panel A of Table 5 shows that goodwill resulting from cross-border transactions is more positively associated with stock returns and adjusted stock returns in the year following completion of the acquisition than goodwill from domestic acquisitions (b_3 is positive and significant at less than 5%, two-sided). This result confirms previous findings from the analysis of post-acquisition operating performance, i.e., expected synergies from cross-border deals are more positively associated with value creation for acquirers relative to expected synergies from domestic deals. The change in ROA and market-to-book ratio are positively associated with stock returns (significant at less than 1% and 10%, respectively, two-sided).

The local tax rate of the acquired firm is negatively associated with acquirers post acquisition returns (significant at less than 10%, two-sided).

Panel B of Table 5 shows that goodwill resulting from cross-border acquisitions is positively associated with acquirers' Tobin's q post acquisition (significant at less than 5%, two-sided), which corroborates previously reported evidence of more accurate expected synergies in cross-border deals than in domestic deals.

The relative size of the transaction ($Materiality_t$) is negatively associated with Tobin's q (significant at less than 1%, two-sided). Sales growth and the acquirer's Tobin's q before the transaction are positively correlated with post-acquisition Tobin's q (significant at less than 10% and 1% respectively, two sided).

5.3 EXPECTED SYNERGIES RESULTING FROM CROSS-BORDER M&AS AND LIKELIHOOD OF FUTURE GOODWILL IMPAIRMENT

Table 6 reports the estimation results of model (5) that facilitates comparison of the likelihood of post-acquisition goodwill impairment between domestic and cross-border acquirers.

[Insert Table 6 about Here]

The results indicate that cross-border acquirers are less likely to impair goodwill in the year following completion of the acquisition than domestic acquirers. Coefficient b_1 , which measures the difference in the likelihood of goodwill impairment in $t+1$ between cross-border and domestic goodwill, is negative and significant at 5% (two-sided). This indicates that for cross-border M&As, management is less likely to overestimate expected synergies and as a result tends to impair goodwill less often. This result holds after controlling for the magnitude of goodwill resulting from the transaction ($GDWL_PPA_t$), goodwill resulting from past transactions ($GDWL_Ac_{t-1}$), past impairment ($DIMP_t, DIMP_{t-1}$), firm leverage (LEV_{t+1}), size of the acquirer ($SIZE_{t+1}$), and post-acquisition performance ($ROA_{t+1}, \Delta ROA_{t+1}, \Delta SALE_{t+1}, MTB_{t+1}, MTB_{t+1} < 1$).

We find that ROA is negatively associated with the probability and magnitude of goodwill impairment while $MTB_{t+1} < 1$ and $DIMP_{t-1}$, are positively associated with the likelihood of goodwill impairment in $t+1$.

5.4 EXPECTED SYNERGIES AND POST-ACQUISITION PERFORMANCE FOR CULTURALLY AND INSTITUTIONALLY DISTANT COUNTRIES

We next examine whether the ability of acquirers of foreign targets to forecast expected synergies is related to cultural and institutional distance. Table 7, Panel A presents the results of the factor analysis of several dimensions of culture and institutions: the four Hofstede

dimensions of culture, GAAP difference, difference in level of trust, law origin, language, and economic development.

[Insert Table 7 About Here]

We identify one factor with an eigenvalue greater than 1 that explains 86.7% of the variance in the raw data. We also note that the results from the factor analysis are consistent with expectations, in that related structural measures load together in an intuitively reasonable manner. The underlying variables, which measure differences relative to the US, load positively with Factor 1 (see, e.g., GAAP difference), whereas variables that are similar to the US load negatively (see Common law and English language). Increasing values of Factor 1 indicate more distant countries. Table 7, Panel B lists the countries classified as more distant and less distant from the US based on the median value of factor 1.

Table 7, Panel C presents the results of model (6) estimated on the subsample of cross-border M&As. It provides some evidence that, for performance measured over the period $t-1$ to $t+2$, cross-border M&As in more culturally and institutionally distant countries result in a lower association between goodwill and change in industry-adjusted ROA than for goodwill of less culturally and institutionally distant countries (coefficient b_3 is negative and significant at the 10% level, two-sided). For $\Delta ROA_{t-1,t+1}$, b_3 is statistically insignificant at conventional levels.

To corroborate the above findings, Panel D and Panel E of Table 7 present the estimation results of model (1), which facilitates direct comparison of domestic transactions with cross-border transactions in relatively less distant countries (Panel D) and relatively more distant countries (Panel E). The results suggest that management's ability to forecast synergies more accurately in cross-border transactions relative to domestic transactions is mainly driven by M&As in less institutionally and culturally distant countries (b_3 is positive and significant at 10% or better in Panel D of Table 7). In more institutionally and culturally distant countries (Panel E of Table 7), we do not find evidence of management's superior ability to forecast synergies in cross-border deals relative to domestic deals (b_3 is not reliably different from zero).

Panel F of Table 7 documents that acquirers of targets in the most culturally and institutionally distant countries (*Group4*) are more likely to impair goodwill in the year following completion of the transaction than acquirers of targets in the least distant countries (*Group1*) (b_3 is positive and significant at the 1% level, two-sided). These results are consistent with managers' ability to forecast synergies being lower in more culturally and institutionally distant countries.

6. Additional robustness tests

6.1 MATCHED SAMPLES

One potential concern is that, although we control for a number of factors, the underlying characteristics of cross-border acquirers and domestic acquirers differ. Therefore the observed differences in post-acquisition performance may be attributable to differences in the underlying characteristics of the acquirers that make the M&As decisions. To address this potential endogeneity concern, we create a propensity-score-matched sample (referred to hereafter as the matched sample) and repeat our main test using the matched sample to test our core hypothesis (H1).

We use the following logit model to estimate the determinants of cross-border M&As in year t (the transaction completion year):

$$\begin{aligned} \Pr(\text{CrossBorder} = 1) = & b_0 + b_1\text{SIZE}_{t-1} + b_2\text{Av}\Delta\text{SALE}_{t-1,t-2} + b_3\text{RET}_{t-1} + b_4\text{ROA}_{t-1} & (8) \\ & + b_5\Delta\text{ROA}_{t-2;t-1} + b_5\text{TQ}_{t-1} + b_6\text{LEV}_{t-1} + b_7\text{GDWL}_{Ac,t-1} \\ & + b_8\text{CASH}_{t-1} + b_9\text{CAPEX}_{t-1} + b_{10}\text{DIMP}_{t-1,t-2} + b_{11}\text{LOSS}_{t-1} \\ & + b_{12}\ln(\text{Frequent})_{t-1} + b_{13}\Delta\text{GDP}_{t-2;t-1} + b_{14}\text{UNEMP}_{t-1} \\ & + \text{Year fixed effects} + \text{Industry fixed effects} \end{aligned}$$

where:

CASH_{t-1} = acquirer's cash divided by lagged total assets in the year prior to completion of the transaction;

$\text{DIMP}_{t-2 \text{ or } t-1}$ = 1 if the acquirer has booked goodwill impairment one year or two years before completion of the transaction, and 0 otherwise;

LOSS_{t-1} = 1 if the acquirer's net income is negative in the fiscal year prior to completion of the transaction, and 0 otherwise;

The other variables are as previously defined.

We expect that larger firms are more likely to engage in foreign acquisitions, because such acquisitions are more complex than domestic acquisitions. Size (SIZE_{t-1}) is a proxy for the resources available to perform acquisitions. More mature firms, i.e., firms with lower organic growth are more likely to consider cross-border targets to expand their operations. Therefore, we predict a negative association between sales growth ($\Delta\text{SALE}_{t-2;t-1}$) and the likelihood of cross-border deals. Firm performance is likely to positively influence the probability of cross-border transactions. Therefore, we predict that ROA_{t-1} , $\Delta\text{ROA}_{t-2;t-1}$ and RET_{t-1} are positively associated, and LOSS_{t-1} is negatively associated with the likelihood of cross-border deals. We also expect that less financially constrained firms are more likely to purchase foreign targets because cross-border deals are likely to require more financial flexibility relative to domestic transactions (Chen et al. 2009). Therefore, we expect LEV_{t-1}

and $CASH_{t-1}$ to be, respectively, negatively and positively associated with the likelihood of cross-border deals. We include capital expenditures ($CAPEX_{t-1}$) to capture cash available for foreign acquisitions. As in Erel et al. (2012), we include a measure of growth options with the Tobin's q (TQ_{t-1}). In addition, firms with significant past external growth ($GDWL_Ac_{t-1}$) or impaired goodwill ($DIMP_{t-2}$ or $t-1$) are less likely to engage in risky cross-border transactions. Past transactions may limit the ability of management to integrate a foreign target. Therefore, we expect $GDWL_Ac_{t-1}$ and $DIMP_{t-1}$ or $t-2$ to be negatively associated with cross-border deals. We expect that frequent acquirers ($\ln(Frequency)_i$) are more likely to purchase international targets as they could benefit from their greater experience and higher capacity to perform complex M&As. We predict that GDP growth ($\Delta GDP_{t-1;t}$) in the target country is positively associated with cross-border acquisitions (Erel et al. 2012), while unemployment rate ($UNEMP_t$) is negatively associated with cross-border deals. We also control for year and industry fixed effects.

The estimation results are presented in Table 8, Panel A. The prediction accuracy of the model is 84.8%.

[Insert Table 8 About Here]

We use the predicted probabilities computed from the cross-border determinant model to match each cross-border acquirer with a domestic acquirer. We use matching with replacement due to the relatively small sample size,¹⁵ and impose a 5% maximum distance in the propensity score in order to exclude cross-border acquirers that do not have a reasonable match among the domestic acquirers. The matched sample includes 760 transactions for $\Delta ROA_{t-1;t+1}$ and 523 transactions for $\Delta ROA_{t-1;t+2}$. We present a comparison of differences for the main variables between domestic and cross-border acquirers in Panel B of Table 8. The matching is relatively successful as the samples present little imbalance between the main variables of domestic and cross-border acquirers (ROA_{t-1} and $CASH_{t-1}$ are slightly higher and lower, respectively, for cross-border acquirers than domestic acquirers but the differences are only marginally significant).

The estimation of model (1), which focuses on the association between expected synergies and future performance, is presented in Table 8, Panel C. The results indicate that our core finding of a stronger positive association between goodwill resulting from cross-border M&As and future change in operating performance relative to domestic goodwill is

¹⁵ Dehejia and Wahba (2002) indicate that matching with replacement is better than matching without replacement when there are few relevant comparison units to match with the treatment group. We obtain qualitatively similar results when we repeat the tests using matching without replacement.

qualitatively unchanged (although the significance is lower, probably due to the smaller sample size).

6.2 EFFECT OF EARNINGS MANAGEMENT POST-ACQUISITION

Bens, Goodman, and Neamtiu (2012) document that lower than expected synergies could lead to greater incentives to manipulate short-term performance to avoid or delay CEO turnover. It is possible that such incentives could be even greater for more visible cross-border M&As. Further, audit quality and enforcement are likely to be lower in foreign countries, leading to greater opportunities to manage earnings for acquirers that recently purchased firms in foreign countries. For instance, some studies document that geographic proximity to the SEC affects audit quality (e.g., DeFond, Francis, and Hu 2011) or that multinational firms tend to manipulate earnings in foreign subsidiaries (Dyreng, Hanlon, and Maydew 2012). If this is the case, the documented larger association between expected synergies and post-acquisition performance for cross-border acquirers could be the result of greater income-increasing earnings management in cross-border acquirers than in domestic acquirers (although this is less likely to affect other measures of post-acquisition performance). To rule out this alternative explanation, we estimate model (1) after controlling for the change in discretionary accruals between the year prior to completion of the acquisition and the year following completion of the acquisition ($\Delta DACC_{t-1;t+1}$). Following Dechow, Sloan, and Sweeney (1995), we measure discretionary accruals as the residuals from the following model,¹⁶ estimated for each two-digit SIC2 industry-year group with at least 10 observations:

$$TACC_t/AT_{t-1} = a_1 1/AT_{t-1} + a_2(\Delta SALES_t - \Delta REC_t)/AT_{t-1} + a_3 PPE_t/AT_{t-1} + \varepsilon_t \quad (9)$$

where:

$TACC_t$ = Income before extraordinary items minus operating cash flow;

AT_t = Total assets;

$SALES_t$ = Total sales;

REC_t = Accounts receivable;

PPE_t = Gross property, plant and equipment.

Estimated results are provided in Table 9.¹⁷

[Insert Table 9 About Here]

The results are qualitatively unchanged after controlling for the change in discretionary accruals post-acquisition; goodwill resulting from cross-border transactions is incrementally

¹⁶ The results are qualitatively similar if we use the performance-adjusted version of the modified Jones model (Kothari, Leone, and Wasley 2005).

¹⁷ We lose 23 observations due to the further data constraints of estimating discretionary accruals.

positively associated with change in ROA from the year prior to the acquisition to one year or two years following the acquisition than goodwill resulting from domestic acquisitions (b_3 is positive and significant at less than 10% or better, two-sided).

6.3 EXCLUDING TARGET FIRMS IN SPECIFIC COUNTRIES OR PUBLIC TARGET FIRMS

One other potential concern is that our results may be driven by acquisitions of target firms in countries which would be overrepresented in our sample of cross-border transactions, such as the United Kingdom (114 transactions) or Canada (81 transactions). To alleviate this concern, we estimate model (1) after excluding transactions involving a British or a Canadian target firm. Untabulated results are qualitatively unchanged after excluding these transactions.

It is possible that deals involving public target firms differ to a large extent from deals involving private target firms. If so, including both deal types in our sample may bias our results (although we control for the public/private status of the target in all our models). To rule out this concern, we also conduct our main tests after excluding transactions involving public target firms and find qualitatively similar results.

7. Conclusion

In this study, we explore the differences between the accuracy of expected synergies in cross-border and domestic M&As. We exploit accounting standards that require management to allocate the purchase price to the net fair value of acquired assets (FAS 141) and goodwill. We measure expected synergies resulting from the transaction with “goodwill”, i.e., the excess of the purchase price over the net fair value of acquired assets. Although management’s internal forecasts used in capital allocation decisions are usually not observable, goodwill resulting from M&As offers an opportunity to directly observe management’s expectations of synergies for these critical capital investment allocation decisions. We find that expected synergies from cross-border deals are more positively associated with post-acquisition ROA, sales growth, acquirer stock returns, and acquirer Tobin’s q than with domestic expected synergies. Consistent with these results, we find that cross-border acquirers are less likely to impair goodwill after completion of the acquisition than are domestic acquirers.

We also document that acquirers that complete cross-border acquisitions in more culturally and institutionally distant countries exhibit a lower association between cross-border goodwill and post-acquisition performance and are more likely to impair goodwill than

are acquirers that complete acquisitions in less distant countries. This result indicates that management's ability to forecast synergies is adversely affected by cultural and institutional distance and is relevant in explaining why investors expect lower synergies in cross-border deals involving culturally distant acquirer and target firms (Ahern et al. 2015).

Our study contributes to the literature on M&As and international business at several levels. First, we extend the literature on cross-border M&As (e.g., Lowinski et al. 2004; Nadolska and Barkema 2007; Gubbi et al. 2010; Ahern et al. 2015) by focusing on the accuracy of management's expected synergies across domestic and cross-border M&As. Second, we contribute to studies examining management's ability to accurately forecast future performance (Hirst et al. 2008; Goodman et al. 2014), and extend it to strategic capital allocation decisions such as cross-border M&As. Third, our study adds to the line of research investigating the determinants of goodwill impairments (e.g., Hayn and Hughes 2006; Gu and Lev 2011; Goodman et al. 2014) and informativeness of purchase price allocations (e.g., Kimbrough 2007; Shalev 2009; Paugam et al. 2015).

Our primary analyses are subject to the caveat that we focus only on one country for acquirers. Future research could examine whether our results hold for a sample of non-US acquirers.

Appendix A

Variable Definitions

Name	Definition	Source
$Purchase\ Price_t$	Purchase price in million USD	ppanalyser.com
$Materiality_t$	Purchase price divided by acquirer's lagged total assets	ppanalyser.com and COMPUSTAT
$CrossBorder_t$	1 if the country of the target firm is different from the acquirer's country, and 0 otherwise.	ppanalyser.com
$\Delta ROA_{t-1; t+1}$	Industry-mean-adjusted ROA (EBITDA divided by lagged total assets) one year after completion of the transaction minus industry-mean-adjusted ROA one year before completion of the transaction. Industry is defined by 2-digit SIC codes.	COMPUSTAT
$\Delta ROA_{t-1; t+2}$	Industry-mean-adjusted ROA (EBITDA divided by lagged total assets) two years after completion of the transaction minus industry-mean-adjusted ROA one year before completion of the transaction. Industry is defined by 2-digit SIC codes.	COMPUSTAT
$\Delta SALE_{t-1; t+1}$	sales in the year following completion of the transaction minus sales in the year prior to completion of the transaction scaled by lagged total assets.	COMPUSTAT
$\Delta SALE_{t-1; t+2}$	Sales two years following completion of the transaction minus sales in the year prior to completion of the transaction scaled by lagged total assets.	COMPUSTAT
RET_{t+1}	Acquirer stock return in the fiscal year after completion of the transaction.	COMPUSTAT
$ARET_{t+1}$	Acquirer stock return in the fiscal year after completion of the transaction minus average stock return of COMPUSTAT firms over the same period.	COMPUSTAT
RET_{t-1}	acquirer stock return in the fiscal year prior to completion of the transaction	COMPUSTAT
TQ_{t+1}	Acquirer Tobin's q one year after completion of the transaction, measured as market value of equity + book value of short and long term debt divided by year-end total assets.	COMPUSTAT
$CAPEX_{t+1}$	Acquirer capital expenditures divided by lagged total assets.	COMPUSTAT
$DIMP_{t+1}$	1 if the acquirer books goodwill impairment one year after completion of the transaction, and 0 otherwise.	COMPUSTAT
$DIMP_{t-1; t-2}$	1 if the acquirer has booked goodwill impairment one year or two year before completion of the transaction, and 0 otherwise.	COMPUSTAT
$GDWL_PPA_t$	Goodwill resulting from the transaction divided by purchase price.	ppanalyser.com
$SIZE_{t-1}$	Natural logarithm of total assets in the fiscal year prior to completion of the transaction.	COMPUSTAT
$Av\Delta SALE_{t-1; t-2}$	Average change in sales in the two years prior to completion of the transaction.	COMPUSTAT
ROA_{t-1}	EBITDA divided by lagged total assets in the fiscal year prior to completion of the transaction.	COMPUSTAT
$\Delta ROA_{t-2; t-1}$	Industry-mean-adjusted ROA (EBITDA divided by lagged total assets) one year prior to completion of the transaction minus industry-mean-adjusted ROA two years prior to completion of the transaction. Industry is defined by 2-digit SIC codes.	COMPUSTAT
$MTB_{t+1} < 1$	1 if market-to-book ratio is below one, and 0 otherwise.	COMPUSTAT
LEV_{t-1}	Long-term debt plus current portion of long term debt in the fiscal year prior to completion of the transactions divided by lagged total assets.	COMPUSTAT

$GDWL_Ac_{t-1}$	Goodwill in the acquirer balance sheet in the year prior to completion of the transaction divided by lagged total assets.	COMPUSTAT
$CASH_{t-1}$	Cash divided by lagged total assets in the year prior to completion of the transaction.	COMPUSTAT
$LOSS_{t-1}$	1 if net income is negative in the fiscal year prior to completion of the transaction, and 0 otherwise.	COMPUSTAT
$\ln(Frequent)_t$	Natural logarithm of number of acquisitions completed by the acquirers over the sample period.	ppanalyser.com
$Public_t$	1 if the target firm is a public firm, and 0 otherwise.	inf Financials.com
$\Delta GDP_{t-1:t}$	GDP growth rate of the target country in t.	World Bank
TAX	Corporate income tax rate of the target country measured in 2011.	KPMG ¹⁸ and E&Y (Worldwide corporate tax guide, 2013) ¹⁹
$UNEMP_{t-1}$	Unemployment rate of the target country expressed as a percentage of the total labor force according to the definition of the international labor organization.	World Bank
$High_Diff_t$	1 if the target country is a culturally and institutionally distant country, and 0 otherwise. We measure cultural and institutional distance using factor analysis of several dimensions: the four Hofstede dimensions of culture, differences in levels of trust, differences with US GAAP, legal origin, language of the target country and GDP per capita expressed in percentage of US GDP per capita.	Bae et al. (2008) Francis et al. (Forthcoming) World Value Survey Hofstede (2001) World Bank
$Group_{i(i=1,2,3,4)}$	Dummy variables based on the distribution of the first factor from the factor analysis of structural cultural and institutional dimensions. <i>Group1</i> 1 for acquirers of target in the less culturally and institutionally distant countries, and 0 otherwise. <i>Group4</i> 1 for acquirers of target in the most culturally and institutionally distant countries, and 0 otherwise.	Bae et al. (2008) Francis et al. (Forthcoming) World Value Survey Hofstede (2001) World Bank
$\Delta DACC_{t-1; t+1}$	Change in discretionary accruals between the year prior to completion of the acquisition and the year following completion of the acquisition. Discretionary accruals are measured as the residuals of the following model estimated for each two-digit industry-year group with at least 10 observations: $TACC_t/AT_{t-1} = a_1/AT_{t-1} + a_2(\Delta SALES_t - \Delta REC_t)/AT_{t-1} + a_3PPE_t/AT_{t-1} + \varepsilon$ where: $TACC_t$ Income before extraordinary items minus operating cash flow; AT_t Total assets; $SALES_t$ Total sales; REC_t Accounts receivable; PPE_t Gross property, plant and equipment.	COMPUSTAT

¹⁸ Available at: <https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html>

¹⁹ Available at: <http://www.ey.com/GL/en/Services/Tax/Worldwide-Corporate-Tax-Guide---Country-list>.

References

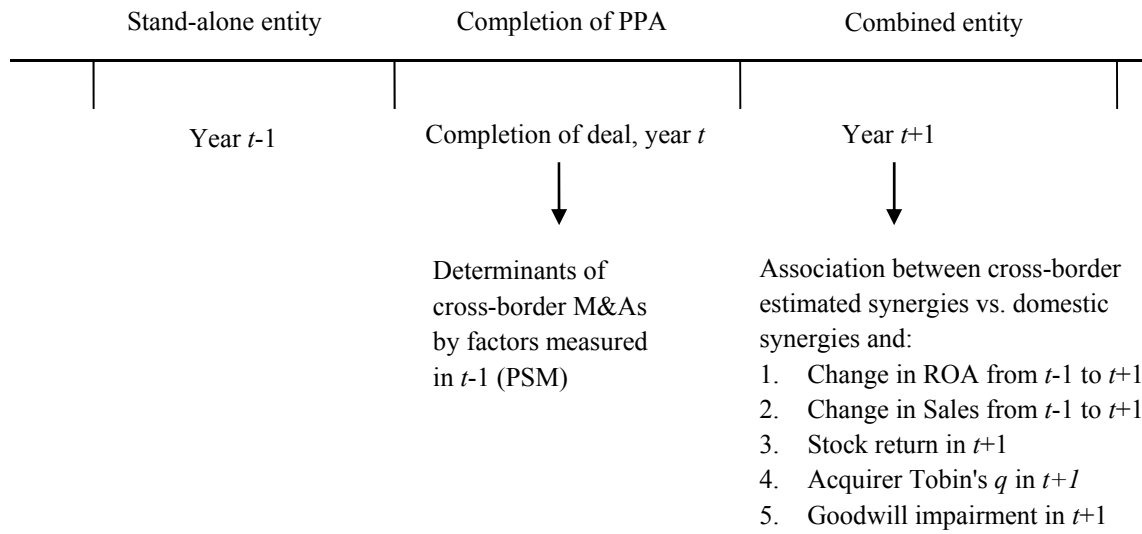
- Ahern, K. R., D. Daminelli, and C. Fracassi. 2015. Lost in translation? The effect of cultural values on mergers around the world. *Journal of Financial Economics* 117 (1): 165-189.
- Aybar, B., and A. Ficici. 2009. Cross-border acquisitions and firm value: An analysis of emerging-market multinationals. *Journal of International Business Studies* 40 (8): 1317-1338.
- Bae, K.-H., K. Kanagaretnam, and H. Tan. 2015. Which analysts to believe? Analysts' conflicts of interest and societal trust.
- Bae, K.-H., H. Tan, and M. Welker. 2008. International GAAP differences: The impact on foreign analysts. *The Accounting Review* 83 (3): 593-628.
- Baker, M., R. Ruback, S., and J. Wurgler. 2007. Behavioral corporate finance. In *Handbook of corporate finance*, Vol. 1, eds, Espen Eckbo, B., 145-186. Amsterdam, The Netherlands: North Holland.
- Beatty, A., and J. Weber. 2006. Accounting discretion in fair value estimates: An examination of SFAS 142 goodwill impairments. *Journal of Accounting Research* 44 (2): 257-288.
- Bens, D. A., T. H. Goodman, and M. Neamtiu. 2012. Does investment-related pressure lead to misreporting? An analysis of reporting following M&A transactions. *The Accounting Review* 87 (3): 839-865.
- Black, E. L., T. A. Carnes, T. Jandik, and B. C. Henderson. 2007. The relevance of target accounting quality to the long-term success of cross-border mergers. *Journal of Business Finance & Accounting* 34 (1/2): 139-168.
- Capron, L. 1999. The long-term performance of horizontal acquisitions. *Strategic Management Journal* 20 (11): 987-1018.
- Capron, L., and J.-C. Shen. 2007. Acquisitions of private vs. Public firms: Private information, target selection, and acquirer returns. *Strategic Management Journal* 28 (9): 891-911.
- Chakrabarti, R., S. Gupta-Mukherjee, and N. Jayaraman. 2009. Mars-venus marriages: Culture and cross-border M&A. *Journal of International Business Studies* 40 (2): 216-236.
- Chen, S.-F. S. 2008. The motives for international acquisitions: Capability procurements, strategic considerations, and the role of ownership structures. *Journal of International Business Studies* 39 (3): 454-471.
- Chen, Y.-R., Y.-L. Huang, and C.-N. Chen. 2009. Financing constraints, ownership control, and cross-border m&as: Evidence from nine East Asian economies. *Corporate Governance: An International Review* 17 (6): 665-680.
- Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70 (2): 193-225.
- DeFond, M., J. R. Francis, and X. Hu. 2011. The geography of SEC enforcement and auditor reporting for financially distressed clients. Working paper.
- Dehejia, R. H., and S. Wahba. 2002. Propensity score-matching methods for nonexperimental causal studies. *Review of Economics & Statistics* 84 (1): 151.
- Denis, D. J., D. K. Denis, and K. Yost. 2002. Global diversification, industrial diversification, and firm value. *Journal of Finance* 57 (5): 1951-1979.
- Dutta, S., and V. Jog. 2009. The long-term performance of acquiring firms: A re-examination of an anomaly. *Journal of Banking & Finance* 33 (8): 1400-1412.
- Dyregang, S., M. Hanlon, and E. Maydew. 2012. Where do firms manage earnings? *Review of Accounting Studies* 17 (3): 649-687.
- Erel, I., R. C. Liao, and M. S. Weisbach. 2012. Determinants of cross-border mergers and acquisitions. *Journal of Finance* 67 (3): 1045-1082.
- FASB. 2001a. *Statement of financial accounting standards (SFAS) No. 141: Business combinations*. Norwalk, CT: Financial Accounting Standards Board.
- FASB. 2001b. *Statement of financial accounting standards (SFAS) No. 142: Goodwill and other intangible assets*. Norwalk, CT: Financial Accounting Standards Board.
- FASB. 2007. *Statement of financial accounting standards (SFAS) No. 141: Business combinations - revised*. Norwalk, CT: Financial Accounting Standards Board.
- Ferreira, M. A., M. Massa, and P. Matos. 2010. Shareholders at the gate? Institutional investors and cross-border mergers and acquisitions. *Review of Financial Studies* 23 (2): 601-644.
- Ferris, S. P., N. Jayaraman, and S. Sabherwal. 2013. CEO overconfidence and international merger and acquisition activity. *Journal of Financial & Quantitative Analysis* 48 (1): 137-164.
- Filip, A., T. Jeanjean, and L. Paugam. 2015. Using real activities to avoid goodwill impairment losses: Evidence and effect on future performance. *Journal of Business Finance & Accounting* 42 (3-4): 515-554.
- Francis, B. B., I. Hasan, X. Sun, and M. Waisman. 2014. Can firms learn by observing? Evidence from cross-border m&as. *Journal of Corporate Finance* 25 (April): 202-215.

- Francis, J. R., S. X. Huang, and I. K. Khurana. Forthcoming. The role of similar accounting standards in cross-border mergers and acquisitions. *Contemporary Accounting Research*.
- Goodman, T. H., M. Neamtiu, N. Shroff, and H. D. White. 2014. Management forecast quality and capital investment decisions. *The Accounting Review* 89 (1): 331-365.
- Gu, F., and B. Lev. 2011. Overpriced shares, ill-advised acquisitions, and goodwill impairment. *The Accounting Review* 86 (6): 1995-2022.
- Gubbi, S. R., P. S. Aulakh, S. Ray, M. B. Sarkar, and R. Chittoor. 2010. Do international acquisitions by emerging-economy firms create shareholder value? The case of Indian firms. *Journal of International Business Studies* 41 (3): 397-418.
- Harford, J., and K. A. I. Li. 2007. Decoupling CEO wealth and firm performance: The case of acquiring CEOs. *Journal of Finance* 62 (2): 917-949.
- Harris, E., C. M. Petrovits, and M. H. Yetman. 2015. The effect of nonprofit governance on donations: Evidence from the revised form 990. *The Accounting Review* 90 (2): 579-610.
- Hayn, C., and P. J. Hughes. 2006. Leading indicators of goodwill impairment. *Journal of Accounting, Auditing & Finance* 21 (3): 223-265.
- Henning, S. L., B. L. Lewis, and W. H. Shaw. 2000. Valuation of the components of purchased goodwill. *Journal of Accounting Research* 38 (2): 375-386.
- Hirst, D. E., L. Koonce, and S. Venkataraman. 2008. Management earnings forecasts: A review and framework. *Accounting Horizons* 22 (3): 315-338.
- Hofstede, G. 2001. *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. London: Sage Publications, Second ed.
- Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76 (2): 323-329.
- Johnson, L. T., and K. R. Petrone. 1998. Is goodwill an asset? *Accounting Horizons* 12 (3): 293-303.
- Jory, S. R., and T. N. Ngo. 2014. Cross-border acquisitions of state-owned enterprises. *Journal of International Business Studies* 45 (9): 1096-1114.
- Kimbrough, M. D. 2007. Do investors rely on purchase price allocation disclosures?
- Kothari, S. P., A. J. Leone, and C. E. Wasley. 2005. Performance matched discretionary accruals measures. *Journal of Accounting and Economics* 39 (1): 163-197.
- Lobo, G., L. Paugam, D. Zhang, and J.-F. Casta. 2015. The effect of joint auditor pair composition on audit quality: Evidence from impairment tests. *Working paper*.
- Lowinski, F., D. Schiereck, and T. W. Thomas. 2004. The effect of cross-border acquisitions on shareholder wealth -- evidence from Switzerland. *Review of Quantitative Finance & Accounting* 22 (4): 315-330.
- Moeller, S. B., and F. P. Schlingemann. 2005. Global diversification and bidder gains: A comparison between cross-border and domestic acquisitions. *Journal of Banking & Finance* 29 (3): 533-564.
- Nadolska, A., and H. G. Barkema. 2007. Learning to internationalise: The pace and success of foreign acquisitions. *Journal of International Business Studies* 38 (7): 1170-1186.
- Nanda, D., and P. Wysocki. 2013. Trust, external capital and financial transparency.
- Paugam, L., P. Astolfi, and O. Ramond. 2015. Accounting for business combinations: Do purchase price allocations matter? *Journal of Accounting & Public Policy* 34 (4): 362-391.
- Pevzner, M., F. Xie, and X. Xin. 2015. When firms talk, do investors listen? The role of trust in stock market reactions to corporate earnings announcements. *Journal of Financial Economics* 117 (1): 190-223.
- Ramanna, K. 2008. The implications of unverifiable fair-value accounting: Evidence from the political economy of goodwill accounting. *Journal of Accounting and Economics* 45 (2-3): 253-281.
- Ramanna, K., and R. L. Watts. 2012. Evidence on the use of unverifiable estimates in required goodwill impairment. *Review of Accounting Studies* 17 (4): 749-781.
- Reuer, J. J., O. Shenkar, and R. Ragozzino. 2004. Mitigating risk in international mergers and acquisitions: The role of contingent payouts. *Journal of International Business Studies* 35 (1): 19-32.
- Roll, R. 1986. The hubris hypothesis of corporate takeovers. *Journal of Business* 59 (2): 197-216.
- Rossi, S., and P. F. Volpin. 2004. Cross-country determinants of mergers and acquisitions. *Journal of Financial Economics* 74 (2): 277-304.
- Roychowdhury, S., and R. L. Watts. 2007. Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting. *Journal of Accounting & Economics* 44 (1/2): 2-31.
- Seth, A., K. P. Song, and R. Pettit. 2000. Synergy, managerialism or hubris? An empirical examination of motives for foreign acquisitions of U.S. Firms. *Journal of International Business Studies* 31 (3): 387.
- Shalev, R. 2009. The information content of business combination disclosure level. *The Accounting Review* 84 (1): 239-270.
- Shalev, R., I. X. Zhang, and Y. Zhang. 2013. CEO compensation and fair value accounting: Evidence from purchase price allocation. *Journal of Accounting Research* 51 (4): 819-854.
- Watts, R. L. 2003. Conservatism in accounting part i: Explanations and implications. *Accounting Horizons* 17 (3): 207-221.

Zanoni, A. B. 2009. *Accounting for goodwill*. New York: Routledge/Taylor & Francis.

Zhang, I. X., and Y. Zhang. Forthcoming. Accounting discretion and purchase price allocation after acquisitions
Journal of Accounting, Auditing & Finance.

FIGURE 1
Empirical strategy



PPA = Purchase Price Allocation
This figure summarizes our empirical strategy.

TABLE 1*Sample selection and composition of the sample of deals***Panel A – Sample selection**

Proprietary data from ppanalyser.com	5,785
- Observations not matched with COMPUSTAT North America	<u>(1,947)</u>
	= 3,838
- Observations with missing variables	<u>(1,397)</u>
	= 2,441
- Non-US Acquirers	<u>(321)</u>
	= 2,120
- Transactions in the financial sector	<u>(114)</u>
Final sample of Transactions =	<u>2,006</u>

Panel B – Target firms’ countries

Country	No.	%	Country	No.	%
Argentina	3	0.1%	Luxembourg	1	0.0%
Australia	26	1.3%	Malaysia	1	0.0%
Austria	1	0.0%	Mexico	11	0.5%
Belgium	4	0.2%	Netherlands	21	1.0%
Brazil	15	0.7%	New Zealand	3	0.1%
Bulgaria	1	0.0%	Norway	6	0.3%
Canada	81	4.0%	Panama	1	0.0%
Chile	5	0.2%	Peru	1	0.0%
China	21	1.0%	Philippines	1	0.0%
Colombia	1	0.0%	Poland	7	0.3%
Cyprus	1	0.0%	Romania	1	0.0%
Czech Republic	1	0.0%	Russian Federation	3	0.1%
Denmark	7	0.3%	Singapore	4	0.2%
Egypt	3	0.1%	South Korea	1	0.0%
Estonia	1	0.0%	Spain	9	0.4%
Finland	3	0.1%	Sweden	16	0.8%
France	28	1.4%	Switzerland	10	0.5%
Germany	45	2.2%	Taiwan	5	0.2%
Honduras	1	0.0%	Turkey	1	0.0%
Hong Kong	4	0.2%	United Arab Emirates	3	0.1%
Iceland	1	0.0%	United Kingdom	114	5.7%
India	12	0.6%	United States	1,467	73.1%
Ireland	11	0.5%	Uruguay	1	0.0%
Israel	16	0.8%	Venezuela	1	0.0%
Italy	18	0.9%			
Japan	7	0.3%			
			Total	2,006	100.0%

Panel C – Distribution of deals per year of completion

Year	No.	%
2008	307	15.3%
2009	234	11.7%
2010	86	4.3%
2011	510	25.4%
2012	468	23.3%
2013	401	20.0%
Total	2,006	100.0%

Panel D – Distribution of deals per industry of the acquirers (Global Industry Classification Standards)

GICS	No.	%
Energy	137	6.8%
Materials	106	5.3%
Industrials	507	25.3%
Discretionary	177	8.8%
Consumer Staples	90	4.5%
Health Care	341	17.0%
Information Technology	604	30.1%
Telecommunication Services	32	1.6%
Utilities	12	0.6%
Total	2,006	100.0%

TABLE 2
Univariate statistics

Panel A – Full sample

	N	Mean	St. Dev	p25	Median	p75
<i>Purchase_Price_t</i>	2,006	344.2227	1,742.0672	11.5000	43.2965	171.3000
<i>Materiality_t</i>	2,006	0.1355	0.2760	0.0181	0.0473	0.1403
<i>CrossBorder_t</i>	2,006	0.2687	0.4434	0.0000	0.0000	1.0000
$\Delta ROA_{t-1; t+1}$	2,006	-0.0170	0.2005	-0.0538	-0.0135	0.0167
$\Delta SALE_{t-1; t+1}$	2,006	0.2588	0.5786	0.0185	0.1452	0.3430
<i>RET_{t+1}</i>	2,006	0.3063	0.8517	-0.0708	0.1698	0.4479
<i>ARET_{t+1}</i>	2,006	-0.0074	0.8092	-0.3601	-0.0919	0.1295
<i>TQ_{t+1}</i>	2,006	1.5708	1.0939	0.9225	1.2760	1.9000
<i>CAPEX_{t+1}</i>	2,006	0.0398	0.0460	0.0150	0.0261	0.0465
<i>DIMP_{t+1}</i>	2,006	0.1431	0.3502	0.0000	0.0000	0.0000
<i>GDWL_PPA_t</i>	2,006	0.4728	0.3123	0.2657	0.4737	0.6610
<i>SIZE_{t-1}</i>	2,006	6.8497	1.6635	5.7462	6.7721	7.8635
<i>AvΔSALE_{t-2; t-1}</i>	2,006	0.1049	0.1812	0.0209	0.0835	0.1706
<i>RET_{t-1}</i>	2,006	0.1454	0.7120	-0.1682	0.0690	0.3226
<i>ROA_{t-1}</i>	2,006	0.1265	0.3674	0.0917	0.1422	0.1871
$\Delta ROA_{t-2; t-1}$	2,006	0.0126	0.2111	-0.0273	0.0041	0.0294
<i>MTB_{t-1}</i>	2,006	2.6196	4.9010	1.3136	2.0006	3.1749
<i>LEV_{t-1}</i>	2,006	0.2797	0.3465	0.0394	0.2008	0.3837
<i>GDWL_Ac_{t-1}</i>	2,006	0.2598	0.2209	0.0763	0.2122	0.3947
<i>CASH_{t-1}</i>	2,006	0.2046	0.3056	0.0422	0.1198	0.2826
<i>DIMP_{t-1}</i>	2,006	0.0917	0.2887	0.0000	0.0000	0.0000
<i>LOSS_{t-1}</i>	2,006	0.1780	0.3826	0.0000	0.0000	0.0000
<i>Ln(Frequent)_t</i>	2,006	1.2627	0.7602	0.6931	1.0986	1.7918
<i>Public_t</i>	2,006	0.1176	0.3223	0.0000	0.0000	0.0000
<i>GDP_{t-1}</i>	2,006	1.8561	1.9769	1.6020	1.7733	2.5277
<i>TAX</i>	2,006	0.3269	0.0471	0.3333	0.3500	0.3500
<i>UNEMP_{t-1}</i>	2,006	7.6917	2.0981	5.9000	8.2000	9.0000

t is the year of completion of the transaction. See Appendix A for variable definitions.

Panel B – Domestic and cross-border deals

	Domestic transactions			Cross-Border transactions			Mean diff.	Median diff.
	N	Mean	Median	N	Mean	Median		
<i>Purchase_Price_t</i>	1,467	365.0114	48.4270	539	287.6420	30.5000	-77.3694	-17.9270 ***
<i>Materiality_t</i>	1,467	0.1372	0.0553	539	0.1310	0.0334	-0.0062	-0.0219 ***
$\Delta ROA_{t-1; t+1}$	1,467	-0.0166	-0.0154	539	-0.0182	-0.0091	-0.0015	0.0063 *
$\Delta SALE_{t-1; t+1}$	1,467	0.2718	0.1469	539	0.2234	0.1369	-0.0484	-0.0100
<i>RET_{t+1}</i>	1,467	0.3234	0.1672	539	0.2595	0.1740	-0.0639 *	0.0068
<i>ARET_{t+1}</i>	1,467	0.0052	-0.1053	539	-0.0415	-0.0585	-0.0467	0.0468 **
<i>TQ_{t+1}</i>	1,467	1.5439	1.2416	539	1.6439	1.4286	0.1000 *	0.1871 ***
<i>CAPEX_{t+1}</i>	1,467	0.0418	0.0267	539	0.0346	0.0252	-0.0072 ***	-0.0015
<i>DIMP_{t+1}</i>	1,467	0.1534	0.0000	539	0.1150	0.0000	-0.0383 **	0.0000 **
<i>GDWL_PPA_t</i>	1,467	0.4657	0.4672	539	0.4921	0.4911	0.0265 *	0.0239
<i>SIZE_{t-1}</i>	1,467	6.8409	6.7721	539	6.8736	6.7851	0.0327	0.0130
<i>AvΔSALE_{t-2,t-1}</i>	1,467	0.1116	0.0844	539	0.0865	0.0770	-0.0252 ***	-0.0074
<i>RET_{t-1}</i>	1,467	0.1367	0.0607	539	0.1692	0.0988	0.0325	0.0381
<i>ROA_{t-1}</i>	1,467	0.1261	0.1421	539	0.1276	0.1432	0.0016	0.0011
$\Delta ROA_{t-2; t-1}$	1,467	0.0116	0.0028	539	0.0155	0.0066	0.0039	0.0038
<i>MTB_{t-1}</i>	1,467	2.4906	1.9363	539	2.9706	2.1077	0.4800 *	0.1714 **
<i>LEV_{t-1}</i>	1,467	0.3021	0.2175	539	0.2189	0.1712	-0.0832 ***	-0.0463 ***
<i>GDWL_Ac_{t-1}</i>	1,467	0.2612	0.2111	539	0.2560	0.2144	-0.0052	0.0033
<i>CASH_{t-1}</i>	1,467	0.2001	0.1130	539	0.2168	0.1419	0.0168	0.0289 ***
<i>DIMP_{t-1}</i>	1,467	0.0975	0.0000	539	0.0761	0.0000	-0.0214	0.0000
<i>LOSS_{t-1}</i>	1,467	0.1793	0.0000	539	0.1744	0.0000	-0.0049	0.0000
<i>Ln(Frequent)</i>	1,467	1.2336	1.0986	539	1.3417	1.3863	0.1080 **	0.2877
<i>Public_t</i>	1,467	0.1288	0.0000	539	0.0872	0.0000	-0.0416 **	0.0000 **
<i>GDP_{t-1}</i>	1,467	1.6010	1.7733	539	2.5505	2.0083	0.9495 ***	0.2350 ***
<i>TAX</i>	1,467	0.3500	0.3500	539	0.2639	0.2600	-0.0861 ***	-0.0900 ***
<i>UNEMP_{t-1}</i>	1,467	7.9840	9.0000	539	6.8963	7.2000	-1.0877 ***	-1.8000 ***

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.
t is the year of completion of the transaction. See Appendix A for variable definitions.

TABLE 3

Goodwill resulting from cross-border deals and post-acquisition operating performance

$$\begin{aligned} \Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 \Delta SALE_{t; t+1 \text{ or } t+1, t+2} + b_7 RET_t + b_8 RET_{t+1} \\ & + b_9 MTB_{t-1} + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\ & + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_{t-1; t} + b_{17} TAX + b_{18} UNEMP_t \\ & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta ROA_{t-1; t+1}$			$\Delta ROA_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.027	-1.48	0.140	-0.043 **	-2.05	0.041
<i>CrossBorder_t</i>	-0.045 *	-1.74	0.083	-0.048	-1.55	0.122
<i>GDWL_PPA_t * CrossBorder_t</i>	0.075 **	2.05	0.040	0.082 **	2.00	0.045
<i>Materiality_t</i>	-0.043 *	-1.84	0.067	-0.041	-1.25	0.213
<i>SIZE_{t-1}</i>	0.001	0.2	0.841	0.002	0.61	0.544
<i>ΔSALE_{t, t+1 or t+1; t+2}</i>	0.064 **	2.12	0.034	0.078 **	2.09	0.037
<i>RET_t</i>	0.020 *	1.73	0.085	0.021 **	2.44	0.015
<i>RET_{t+1}</i>				0.032 ***	3.04	0.002
<i>MTB_{t-1}</i>	-0.001	-0.76	0.446	-0.002	-0.91	0.365
<i>LEV_{t-1}</i>	-0.113 *	-1.71	0.087	-0.148 **	-2.04	0.042
<i>ROA_{t-1}</i>	-0.002	-1.35	0.177	-0.001	-0.5	0.619
<i>ΔROA_{t-2; t-1}</i>	0.568 *	1.82	0.069	0.630 **	2.15	0.032
<i>GDWL_Ac_{t-1}</i>	-0.029	-0.87	0.384	-0.042	-1.09	0.275
<i>ln(Frequent)_t</i>	0.004	0.7	0.481	0.010	1.34	0.181
<i>Public_t</i>	0.003	0.3	0.766	0.002	0.2	0.839
<i>ΔGDP_{t-1; t}</i>	0.003	1.39	0.165	0.003	0.93	0.352
<i>TAX</i>	0.006	0.08	0.934	0.037	0.34	0.736
<i>UNEMP_t</i>	0.003 *	1.92	0.055	0.004	1.53	0.126
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	0.031	0.59	0.553	0.031	0.51	0.611
N		2,006			1,495	
Adjusted R ²		0.393			0.459	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

TABLE 4*Goodwill resulting from cross-border deals and future sales growth*

$$\begin{aligned} \Delta SALE_{t-1; t+1} \text{ or } \Delta SALE_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 RET_t + b_7 RET_{t+1} + b_8 MTB_{t-1} + b_9 LEV_{t-1} \\ & + b_{10} ROA_{t-1} + b_{11} \Delta SALE_{t-2; t-1} + b_{12} GDWL_Ac_{t-1} + b_{13} \ln(Frequent)_t \\ & + b_{14} Public_t + b_{15} \Delta GDP_{t-1; t} + b_{16} TAX + b_{17} UNEMP_t + \text{Year fixed effects} \\ & + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta SALE_{t-1; t+1}$			$\Delta SALE_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.062	-1.11	0.269	0.003	0.04	0.969
<i>CrossBorder_t</i>	-0.141 **	-2.42	0.016	-0.215 *	-1.82	0.069
<i>GDWL_PPA_t * CrossBorder_t</i>	0.254 **	2.50	0.013	0.446 *	1.93	0.054
<i>Materiality_t</i>	0.419 ***	3.12	0.002	0.390 **	2.32	0.021
<i>SIZE_{t-1}</i>	-0.085 ***	-4.66	0.000	-0.114 ***	-3.32	0.001
<i>RET_t</i>	0.174 ***	3.17	0.002	0.270 ***	2.75	0.006
<i>RET_{t+1}</i>				0.102 ***	4.38	0.000
<i>MTB_{t-1}</i>	0.001	0.29	0.770	0.002	0.52	0.604
<i>LEV_{t-1}</i>	-0.008	-0.17	0.869	-0.037	-0.61	0.542
<i>ROA_{t-1}</i>	0.022	0.48	0.631	0.034	0.58	0.560
<i>ΔSALE_{t-2; t-1}</i>	0.612 ***	3.60	0.000	0.999 ***	4.13	0.000
<i>GDWL_Ac_{t-1}</i>	0.102	1.03	0.305	0.070	0.46	0.648
<i>ln(Frequent)_t</i>	-0.010	-0.45	0.650	0.029	0.75	0.453
<i>Public_t</i>	0.031	0.78	0.438	-0.037	-0.63	0.531
<i>ΔGDP_{t-1; t}</i>	0.008	1.20	0.230	0.009	0.94	0.350
<i>TAX</i>	0.231	1.01	0.314	0.515	1.49	0.138
<i>UNEMP_t</i>	-0.009	-1.28	0.200	-0.003	-0.34	0.731
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	0.723 ***	3.09	0.002	0.781 **	2.05	0.041
N		2,006			1,497	
Adjusted R ²		0.241			0.223	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

TABLE 5*Goodwill resulting from cross-border deals and firm value post-acquisition***Panel A – Future stock returns**

$$\begin{aligned}
RET_{t+1} \text{ or } ARET_{t+1} = & b_0 + b_1GDWL_PPA_t + b_2CrossBorder_t + b_3GDWL_PPA_t * CrossBorder_t \\
& + b_4Materiality_t + b_5SIZE_{t+1} + b_6MTB_{t+1} + b_7LEV_{t+1} + b_8ROA_{t+1} + b_9\Delta ROA_{t,t+1} \\
& + b_{10}ln(Frequent)_t + b_{11}Public_t + b_{11}\Delta GDP_{t-1,t} + b_{12}TAX + b_{13}UNEMP_{t+1} \\
& + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t
\end{aligned}$$

	<i>RET</i> _{<i>t+1</i>}			<i>ARET</i> _{<i>t+1</i>}		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA</i> _{<i>t</i>}	-0.088	-1.15	0.251	-0.087	-1.14	0.253
<i>CrossBorder</i> _{<i>t</i>}	-0.236 ***	-2.73	0.007	-0.236 ***	-2.73	0.007
<i>GDWL_PPA</i> _{<i>t</i>} * <i>CrossBorder</i> _{<i>t</i>}	0.263 **	2.34	0.020	0.263 **	2.34	0.020
<i>Materiality</i> _{<i>t</i>}	0.145	1.24	0.214	0.145	1.24	0.215
<i>SIZE</i> _{<i>t+1</i>}	-0.028	-0.96	0.335	-0.028	-0.97	0.333
<i>MTB</i> _{<i>t+1</i>}	0.013 *	1.69	0.091	0.013 *	1.69	0.091
<i>LEV</i> _{<i>t+1</i>}	0.342	1.45	0.148	0.342	1.45	0.148
<i>ROA</i> _{<i>t+1</i>}	0.084	0.21	0.831	0.084	0.21	0.831
$\Delta ROA_{t,t+1}$	2.195 ***	2.81	0.005	2.191 ***	2.81	0.005
<i>ln(Frequent)</i> _{<i>t</i>}	-0.019	-0.67	0.501	-0.019	-0.67	0.502
<i>Public</i> _{<i>t</i>}	0.016	0.30	0.761	0.016	0.31	0.759
$\Delta GDP_{t-1,t}$	-0.014	-0.92	0.359	-0.014	-0.91	0.364
<i>TAX</i>	-0.751 *	-1.74	0.082	-0.753 *	-1.75	0.081
<i>UNEMP</i> _{<i>t</i>}	-0.016	-1.17	0.243	-0.016	-1.16	0.244
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	1.438 ***	3.45	0.001	0.765 *	1.84	0.067
N		2,006			2,006	
Adjusted R ²		0.168			0.078	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

Panel B – Tobin's q post-acquisition

$$TQ_{t+1} = b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t + b_4 Materiality_t + b_5 SIZE_{t+1} + b_6 \Delta SALE_{t+1} + b_7 LEV_{t+1} + b_8 ROA_{t+1} + b_9 CAPEX_{t+1} + b_{10} GDWL_Ac_{t-1} + b_{11} TQ_{t-1} + b_{12} \ln(Frequent)_t + b_{13} Public_t + b_{14} \Delta GDP_{t-1,t} + b_{15} TAX + b_{16} UNEMP_{t+1} + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t$$

	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.021	-0.29	0.771
<i>CrossBorder_t</i>	-0.167 *	-1.92	0.055
<i>GDWL_PPA_t * CrossBorder_t</i>	0.227 **	2.03	0.043
<i>Materiality_t</i>	-0.383 ***	-4.44	0.000
<i>SIZE_{t+1}</i>	-0.020	-0.92	0.357
<i>ΔSALE_{t,t+1}</i>	0.235 *	1.93	0.054
<i>LEV_{t+1}</i>	-0.074	-0.58	0.565
<i>ROA_{t+1}</i>	0.005	1.62	0.105
<i>CAPEX_{t+1}</i>	0.379	0.58	0.560
<i>GDWL_Ac_{t-1}</i>	-0.019	-0.16	0.875
<i>TQ_{t-1}</i>	0.531 ***	8.09	0.000
<i>Ln(Frequent)_t</i>	0.025	0.67	0.506
<i>Public_t</i>	-0.010	-0.20	0.840
<i>ΔGDP_{t-1,t}</i>	-0.024	-1.46	0.144
<i>TAX</i>	0.053	0.08	0.934
Unemp	-0.023	-1.87	0.062
Year fixed effects		Yes	
Industry fixed effects		Yes	
Constant	0.496	1.59	0.113
N		2,006	
Adjusted R ²		0.479	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

TABLE 6

Goodwill resulting from cross-border deals and probability of future goodwill impairment

$$\begin{aligned} \Pr(DIMP_{t+1} = 1) = & b_0 + b_1 CrossBorder_t + b_2 GDWL_PPA_t + b_3 Materiality_t + b_4 DIMP_t + b_5 DIMP_{t-1} \\ & + b_6 SIZE_{t+1} + b_7 RET_{t+1} + b_8 LEV_{t+1} + b_9 ROA_{t+1} + b_{10} \Delta ROA_{t+1} + b_{11} \Delta SALE_{t,t+1} \\ & + b_{12} MTB_{t+1} + b_{13} MTB_{t+1} < 1 + b_{14} GDWL_Ac_{t-1} + b_{15} Public_t + b_{16} \Delta GDP_{t-1,t} + b_{17} TAX \\ & + b_{18} UNEMP_t + \text{Year fixed effects} + \text{Industry fixed effects} \end{aligned}$$

	<i>DIMP_{t+1}</i>		
	Coef.	t-stat	p-value
<i>CrossBorder_t</i>	-0.757 **	-2.03	0.043
<i>GDWL_PPA_t</i>	-0.021	-0.08	0.938
<i>Materiality_t</i>	-0.336	-1.01	0.311
<i>DIMP_t</i>	1.272 ***	4.56	0.000
<i>DIMP_{t-1}</i>	0.475	1.54	0.124
<i>SIZE_{t+1}</i>	0.017	0.24	0.812
<i>RET_{t+1}</i>	-0.386	-1.25	0.213
<i>LEV_{t+1}</i>	0.400	0.88	0.378
<i>ROA_{t+1}</i>	-2.751 ***	-2.94	0.003
<i>ΔROA_{t+1}</i>	-1.270	-0.75	0.453
<i>ΔSALE_{t,t+1}</i>	-0.039	-0.16	0.872
<i>MTB_{t+1}</i>	-0.031	-1.36	0.174
<i>MTB_{t+1} < 1</i>	0.606 **	2.01	0.045
<i>GDWL_Ac_{t-1}</i>	0.728	1.34	0.181
<i>Public_t</i>	0.207	0.82	0.412
<i>ΔGDP_{t-1,t}</i>	-0.058	-0.91	0.363
<i>TAX</i>	-4.390	-1.44	0.150
<i>UNEMP_t</i>	-0.078	-1.27	0.205
Year fixed effects		Yes	
Industry fixed effects		Yes	
Constant	-0.386	-0.28	0.783
N		2,006	
Pseudo R ²		0.148	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

TABLE 7

Expected synergies and post-acquisition performance for culturally and institutionally distant countries

Panel A – Factor analysis: Instrument for cultural and institutional differences (Rotated factor loadings)

	Factor 1
Absolute difference in Power distance index	0.8634
Absolute difference in Individualism	0.8979
Absolute difference in Masculinity	0.5764
Absolute difference in Uncertainty avoidance	0.8720
Absolute difference in Trust	0.8280
GAAP difference	0.9039
English	-0.9518
Common	-0.9368
Code	0.8563
GDP per capita (expressed as a % of US GDP)	-0.7884
Factor 1 Eigenvalue	7.2853
Variance explained	0.8674

The structural measures are defined in Appendix A. We use principal factor analysis and identify factor(s) with eigenvalue(s) greater than 1. We identify one factor.

Panel B – Classification of countries into more distant and less distant from the US based on factor analysis

More distant countries (Factor 1 above median)		Less distant countries (Factor 1 below median)
Argentina	Japan	Australia
Austria	Luxembourg	Canada
Belgium	Malaysia	Hong Kong
Brazil	Mexico	Netherlands
Bulgaria	Netherlands	New Zealand
Chile	Norway	Singapore
China	Panama	United Kingdom
Colombia	Peru	
Cyprus	Philippines	
Czech Republic	Poland	
Denmark	Romania	
Egypt	Russian Federation	
Estonia	South Korea	
Finland	Spain	
France	Sweden	
Germany	Switzerland	
Honduras	Taiwan	
Iceland	Turkey	
India	United Arab Emirates	
Ireland	Uruguay	
Israel	Venezuela	
Italy		

Panel B presents the classification of target firm countries based on a factor analysis of differences in institutional and cultural dimensions from the US.

Panel C – Goodwill resulting from cross-border deals and post-acquisition operating performance for high vs. low cultural and institutional differences with the US (sub sample of cross-border transactions)

$$\begin{aligned} \Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 High_Diff_t + b_3 GDWL_PPA_t * High_Diff_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 \Delta SALE_{t; t+1 \text{ or } t+1, t+2} + b_7 RET_t + b_8 RET_{t+1} \\ & + b_9 MTB_{t-1} + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\ & + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_{t-1; t} + b_{16} TAX + b_{17} UNEMP_t \\ & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta ROA_{t-1; t+1}$			$\Delta ROA_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	0.043	1.45	0.149	0.037	1.18	0.238
<i>High_Diff_t</i>	0.035	1.53	0.126	0.049 **	1.98	0.049
<i>GDWL_PPA_t * High_Diff_t</i>	-0.046	-1.28	0.202	-0.072 *	-1.89	0.060
<i>Materiality_t</i>	-0.029 *	-1.66	0.098	0.005	0.3	0.768
<i>SIZE_{t-1}</i>	-0.001	-0.18	0.857	-0.002	-0.42	0.677
<i>AvΔSALE_{t; t+1 or t+1; t+2}</i>	-0.036	-0.43	0.670	-0.127	-1.06	0.290
<i>RET_t</i>	0.040 **	2.53	0.012	0.046 **	2.41	0.017
<i>RET_{t+1}</i>				0.049 ***	2.92	0.004
<i>MTB_{t-1}</i>	-0.001	-0.86	0.392	-0.002 *	-1.92	0.056
<i>LEV_{t-1}</i>	-0.012	-0.28	0.779	-0.001	-0.04	0.971
<i>ROA_{t-1}</i>	0.000	0.33	0.744	0.000	0.04	0.971
<i>ΔROA_{t-2; t-1}</i>	0.110 ***	3.01	0.003	0.168 ***	4.39	0.000
<i>GDWL_Ac_{t-1}</i>	0.030	0.83	0.408	0.041	1.15	0.250
<i>ln(Frequent)_t</i>	0.003	0.48	0.632	0.015 *	1.70	0.090
<i>Public_t</i>	-0.022	-1.18	0.237	-0.026	-1.27	0.206
<i>ΔGDP_{t-1; t}</i>	0.001	0.56	0.576	0.000	0.04	0.969
<i>TAX</i>	-0.033	-0.55	0.581	-0.049	-0.67	0.505
<i>UNEMP_t</i>	0.001	1.07	0.287	0.003	1.42	0.158
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	-0.021	-0.40	0.687	-0.044	-0.82	0.410
N		538			408	
Adjusted R ²		0.091			0.214	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

Panel D – Goodwill resulting from cross-border deals in institutionally and culturally similar foreign countries vs. domestic goodwill (excluding most distant target countries)

$$\begin{aligned} \Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 \Delta SALE_{t; t+1 \text{ or } t+1, t+2} + b_7 RET_t + b_8 RET_{t+1} \\ & + b_9 MTB_{t-1} + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\ & + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_{t-1; t} + b_{17} TAX + b_{18} UNEMP_t \\ & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta ROA_{t-1; t+1}$			$\Delta ROA_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.021	-1.17	0.244	-0.030	-1.45	0.148
<i>CrossBorder_t</i>	-0.107 **	-2.35	0.019	-0.104 *	-1.89	0.059
<i>GDWL_PPA_t * CrossBorder_t</i>	0.099 **	2.06	0.039	0.089 *	1.83	0.068
<i>Materiality_t</i>	-0.010	-0.56	0.573	0.004	0.17	0.867
<i>SIZE_{t-1}</i>	-0.005	-1.10	0.270	-0.007	-1.26	0.207
<i>AvΔSALE_{t+1 / t+1, t+2}</i>	0.099 ***	2.92	0.004	0.053	0.98	0.330
<i>RET_t</i>	0.015	1.22	0.224	0.006	0.38	0.707
<i>RET_{t+1}</i>				0.030 ***	3.06	0.002
<i>MTB_{t-1}</i>	-0.001	-0.49	0.625	-0.001	-0.51	0.613
<i>LEV_{t-1}</i>	-0.128 *	-1.72	0.086	-0.160 **	-2.01	0.045
<i>ROA_{t-1}</i>	-0.002	-1.48	0.139	-0.001	-0.7	0.486
<i>ΔROA_{t-2; t-1}</i>	0.716 **	2.34	0.019	0.740 **	2.59	0.010
<i>GDWL_Ac_{t-1}</i>	-0.038	-1.04	0.297	-0.053	-1.29	0.196
<i>ln(Frequent)_t</i>	0.010	1.57	0.118	0.016 *	1.92	0.055
<i>Public_t</i>	0.009	0.72	0.473	0.008	0.58	0.564
<i>ΔGDP_{t-1; t}</i>	0.010 *	1.70	0.090	0.000	0.01	0.992
<i>TAX</i>	-0.501 **	-2.22	0.027	-0.431	-1.3	0.195
<i>UNEMP_t</i>	0.005	0.75	0.456	-0.002	-0.24	0.808
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	0.24 **	2.21	0.028	0.291 **	2.01	0.044
N		1,704			1,269	
Adjusted R ²		0.491			0.522	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

Panel E – Goodwill resulting from cross-border deals in institutionally and culturally distant foreign countries vs. domestic goodwill (excluding less distant target countries)

$$\begin{aligned} \Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 \Delta SALE_{t; t+1 \text{ or } t+1, t+2} + b_7 RET_t + b_8 RET_{t+1} \\ & + b_9 MTB_{t-1} + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\ & + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_{t-1; t} + b_{17} TAX + b_{18} UNEMP_t \\ & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta ROA_{t-1; t+1}$			$\Delta ROA_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.016	-0.93	0.352	-0.022	-1.13	0.259
<i>CrossBorder_t</i>	-0.029	-1.06	0.288	-0.024	-0.72	0.472
<i>GDWL_PPA_t * CrossBorder_t</i>	0.055	1.30	0.192	0.060	1.26	0.208
<i>Materiality_t</i>	-0.006	-0.41	0.679	0.007	0.38	0.703
<i>SIZE_{t-1}</i>	-0.010	-1.65	0.100	-0.014 *	-1.92	0.056
<i>AvΔSALE_{t+1 / t+1, t+2}</i>	0.043	1.05	0.296	-0.051	-0.70	0.482
<i>RET_t</i>	0.019	1.51	0.133	0.010	0.64	0.525
<i>RET_{t+1}</i>				0.028 ***	3.21	0.001
<i>MTB_{t-1}</i>	-0.001	-0.68	0.496	-0.001	-0.53	0.597
<i>LEV_{t-1}</i>	-0.122 *	-1.78	0.075	-0.153 **	-2.20	0.028
<i>ROA_{t-1}</i>	-0.002	-1.48	0.140	-0.002	-0.91	0.361
<i>ΔROA_{t-2; t-1}</i>	0.578 *	1.92	0.055	0.599 **	2.11	0.035
<i>GDWL_Ac_{t-1}</i>	-0.035	-1.00	0.318	-0.049	-1.19	0.234
<i>ln(Frequent)_t</i>	0.007	1.09	0.276	0.021 **	2.21	0.027
<i>Public_t</i>	0.018	1.43	0.152	0.021	1.49	0.136
<i>ΔGDP_{t-1; t}</i>	0.003	1.09	0.278	0.004	1.22	0.223
<i>TAX</i>	0.050	0.54	0.588	0.105	0.93	0.351
<i>UNEMP_t</i>	0.003	1.61	0.109	0.005 *	1.69	0.092
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	0.068	0.97	0.331	0.068	0.93	0.355
N		1,766			1,311	
Adjusted R ²		0.433			0.466	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

Panel F – Cultural and institutional differences and probability of future impairment

$$\Pr(DIMP_{t+1} = 1) = b_0 + b_1 Group2_t + b_2 Group3_t + b_3 Group4_t + b_4 GDWL_PPA_t + b_5 Materiality_t + b_6 DIMP_t + b_7 DIMP_{t-1} + b_8 SIZE_{t+1} + b_9 RET_{t+1} + b_{10} LEV_{t+1} + b_{11} ROA_{t+1} + b_{12} \Delta ROA_{t,t+1} + b_{13} \Delta SALE_{t,t+1} + b_{14} MTB_{t+1} + b_{15} MTB_{t+1} < 1 + b_{16} GDWL_Ac_{t-1} + b_{17} Public_t + b_{18} \Delta GDP_{t-1,t} + b_{19} TAX + b_{20} UNEMP_t + \text{Year fixed effects} + \text{Industry fixed effects}$$

	<i>DIMP_{t+1}</i>		
	Coef.	t-stat	p-value
<i>Group2_t</i>	0.784	1.23	0.217
<i>Group3_t</i>	0.355	0.65	0.516
<i>Group4_t</i>	1.404 ***	2.72	0.006
<i>GDWL_PPA_t</i>	0.804	1.58	0.115
<i>Materiality_t</i>	-0.201	-0.42	0.673
<i>DIMP_t</i>	1.923 ***	3.73	0.000
<i>DIMP_{t-1}</i>	0.501	0.83	0.404
<i>SIZE_{t+1}</i>	-0.003	-0.02	0.985
<i>RET_{t+1}</i>	-1.409 **	-2.26	0.024
<i>LEV_{t+1}</i>	2.027 ***	2.81	0.005
<i>ROA_{t+1}</i>	-1.972	-0.96	0.338
<i>ΔROA_{t,t+1}</i>	-9.650 *	-1.95	0.051
<i>ΔSALE_{t,t+1}</i>	-1.071	-1.40	0.162
<i>MTB_{t+1}</i>	-0.005	-0.11	0.916
<i>MTB_{t+1} < 1</i>	0.058	0.12	0.908
<i>GDWL_Ac_{t-1}</i>	0.093	0.09	0.931
<i>Public_t</i>	0.994 **	2.05	0.040
<i>ΔGDP_{t-1,t}</i>	-0.083	-1.20	0.229
<i>TAX</i>	-4.588	-1.55	0.121
<i>UNEMP_t</i>	-0.090	-1.45	0.147
Year fixed effects		Yes	
Industry fixed effects		Yes	
Constant	-18.773 ***	-8.99	0.000
N		538	
Pseudo R ²		0.286	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.

TABLE 8*Robustness test: Propensity matched samples***Panel A – Determinants of cross-border deals**

$$\begin{aligned} \Pr(\text{CrossBorder} = 1) = & b_0 + b_1\text{SIZE}_{t-1} + b_2\text{Av}\Delta\text{SALE}_{t-1,t-2} + b_3\text{RET}_{t-1} + b_4\text{ROA}_{t-1} + b_5\Delta\text{ROA}_{t-2;t-1} \\ & + b_6\text{TQ}_{t-1} + b_7\text{LEV}_{t-1} + b_8\text{GDWL_Ac}_{t-1} + b_9\text{CASH}_{t-1} + b_{10}\text{DIMP}_{t-1,t-2} \\ & + b_{11}\text{LOSS}_{t-1} + b_{12}\ln(\text{Frequent})_{t-1} + b_{13}\Delta\text{GDP}_{t-2;t-1} + b_{14}\text{UNEMP}_{t-1} \\ & + \text{Year fixed effects} + \text{Industry fixed effects} \end{aligned}$$

	Coef.	t-stat	p-value
<i>SIZE</i> _{<i>t-1</i>}	0.054	1.21	0.227
<i>Av</i> Δ <i>SALE</i> _{<i>t-1,t-2</i>}	-0.767 **	-2.04	0.041
<i>RET</i> _{<i>t-1</i>}	-0.002	-0.03	0.979
<i>ROA</i> _{<i>t-1</i>}	0.261	1.2	0.229
Δ <i>ROA</i> _{<i>t-2;t-1</i>}	0.228	0.53	0.593
<i>MTB</i> _{<i>t-1</i>}	0.066	1.09	0.276
<i>LEV</i> _{<i>t-1</i>}	-0.906 ***	-3.17	0.002
<i>GDWL_Ac</i> _{<i>t-1</i>}	0.167	0.45	0.656
<i>CASH</i> _{<i>t-1</i>}	0.289	1.00	0.319
<i>CAPEX</i> _{<i>t-1</i>}	-0.839	-0.56	0.579
<i>DIMP</i> _{<i>t-1,t-2</i>}	-0.203	-1.29	0.198
<i>LOSS</i> _{<i>t-1</i>}	0.266	1.36	0.174
<i>ln(Frequent)</i> _{<i>t</i>}	0.161 *	1.81	0.071
Δ <i>GDP</i> _{<i>t-2;t-1</i>}	0.375 ***	3.60	0.000
<i>UNEMP</i> _{<i>t-1</i>}	-0.711 ***	-4.39	0.000
Year fixed effects		Yes	
Industry fixed effects		Yes	
Constant	0.960	1.02	0.307
N		2,006	
Pseudo R ²		0.189	
Classification accuracy		84.82%	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. z-stats are clustered by acquirers.

Panel B – Descriptive statistics of matched samples (main variables)

	Matched domestic transactions			Cross-Border transactions			Mean diff.
	N	Mean	Median	N	Mean	Median	
$SIZE_{t-1}$	380	7.0780	7.2294	380	6.9356	7.0398	-0.1424
ROA_{t-1}	380	0.1103	0.1314	380	0.1293	0.1452	0.0190 *
$\Delta ROA_{t-2; t-1}$	380	0.0263	0.0053	380	0.0126	0.0066	-0.0137
RET_{t-1}	380	0.1736	0.0661	380	0.1532	0.0891	-0.0204
MTB_{t-1}	380	2.7005	2.2939	380	2.6622	2.0376	-0.0382
LEV_{t-1}	380	0.2700	0.1543	380	0.2343	0.1852	-0.0357
$CASH_{t-1}$	380	0.2476	0.1192	380	0.2036	0.1312	-0.0439 *
$CAPEX_{t-1}$	380	0.0413	0.0211	380	0.0434	0.0276	0.0021
$DIMP_{t-1,t-2}$	380	0.1789	0.0000	380	0.1711	0.0000	-0.0079

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

Panel C – Goodwill resulting from cross-border deals and post-acquisition operating performance (matched samples)

$$\begin{aligned} \Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 \Delta SALE_{t+1/t+1, t+2} + b_7 RET_t \quad b_8 RET_{t+1} \\ & + b_9 MTB_{t-1} + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\ & + b_{14} \ln(Frequent)_t + b_{15} Public_t + b_{16} \Delta GDP_t + b_{17} TAX + b_{18} UNEMP_t \\ & + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta ROA_{t-1; t+1}$			$\Delta ROA_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.056 **	-2.07	0.039	-0.092 **	-2.31	0.021
<i>CrossBorder_t</i>	-0.025	-1.21	0.227	-0.020	-0.89	0.376
<i>GDWL_PPA_t * CrossBorder_t</i>	0.057 *	1.72	0.086	0.083 **	2.04	0.042
<i>Materiality_t</i>	-0.009	-0.28	0.782	0.024	0.62	0.534
<i>SIZE_{t-1}</i>	0.000	0.09	0.925	0.004	0.91	0.363
<i>AvΔSALE_{t; t+1 or t+1, t+2}</i>	0.056 **	2.57	0.010	0.003	0.09	0.925
<i>RET_t</i>	0.021 *	1.91	0.057	0.044 ***	4.07	0.000
<i>RET_{t+1}</i>				0.027 ***	3.56	0.000
<i>MTB_{t-1}</i>	0.001	0.68	0.494	0.000	-0.07	0.943
<i>LEV_{t-1}</i>	-0.116 ***	-3.05	0.002	-0.144 ***	-3.88	0.000
<i>ROA_{t-1}</i>	0.000	-0.56	0.577	-0.001	-0.47	0.637
<i>ΔROA_{t-2; t-1}</i>	0.035	0.58	0.560	0.119 ***	2.63	0.009
<i>GDWL_Ac_{t-1}</i>	0.028	0.97	0.333	0.047	1.30	0.196
<i>ln(Serial)_t</i>	0.003	0.45	0.651	0.011	1.26	0.210
<i>Public_t</i>	0.003	0.21	0.832	-0.011	-0.63	0.527
<i>ΔGDP_{t-1;t}</i>	-0.001	-0.23	0.819	-0.001	-0.37	0.714
<i>TAX</i>	0.090	1.16	0.247	0.126	1.17	0.241
<i>UNEMP_t</i>	0.002 **	2.02	0.044	0.003	1.35	0.177
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	-0.024	-0.49	0.622	-0.045	-0.85	0.399
N		760			523	
Adjusted R ²		0.221			0.305	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. Panel A shows the estimation results of a logit model used to compute propensity scores of the probability to complete a cross-border acquisition. Panel B provides the variable mean comparisons across cross-border and domestic acquirers for the matched sample. Firms completing cross-border deals are propensity-score-matched with firms that completed a domestic acquisition. We use one-to-one matching with replacement within a maximum caliper distance of 8%. The matched sample include 401 firm-year observations that completed a cross border deal and 401 firm-year observations that completed a domestic acquisition.

See Appendix A for variable definitions.

t-stats are clustered by acquirers.

TABLE 9

Robustness test: Controlling for changes in earnings management post-acquisition

$$\begin{aligned} \Delta ROA_{t-1; t+1} \text{ or } \Delta ROA_{t-1; t+2} = & b_0 + b_1 GDWL_PPA_t + b_2 CrossBorder_t + b_3 GDWL_PPA_t * CrossBorder_t \\ & + b_4 Materiality_t + b_5 SIZE_{t-1} + b_6 \Delta SALE_{t+1/t+1, t+2} + b_7 RET_t + b_8 RET_{t+1} \\ & + b_9 MTB_{t-1} + b_{10} LEV_{t-1} + b_{11} ROA_{t-1} + b_{12} \Delta ROA_{t-2; t-1} + b_{13} GDWL_Ac_{t-1} \\ & + b_{14} \ln(Frequent)_{t,t} + b_{15} Public_t + b_{16} \Delta DACC_{t-1, t+1} + b_{17} \Delta GDP_t \\ & + b_{18} TAX + b_{19} UNEMP_t + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_t \end{aligned}$$

	$\Delta ROA_{t-1; t+1}$			$\Delta ROA_{t-1; t+2}$		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
<i>GDWL_PPA_t</i>	-0.026	-1.47	0.143	-0.044 **	-2.07	0.039
<i>CrossBorder_t</i>	-0.045 *	-1.77	0.077	-0.046	-1.52	0.130
<i>GDWL_PPA_t * CrossBorder_t</i>	0.075 **	2.06	0.040	0.079 *	1.96	0.051
<i>Materiality_t</i>	-0.044 *	-1.78	0.076	-0.039	-1.19	0.233
<i>SIZE_{t-1}</i>	0.001	0.29	0.769	0.003	0.75	0.452
<i>AvΔSALE_{t+1/t+1, t+2}</i>	0.063 **	2.07	0.039	0.073 *	1.94	0.053
<i>RET_t</i>	0.021 *	1.79	0.074	0.021 **	2.49	0.013
<i>RET_{t+1}</i>				0.047 ***	3.83	0.000
<i>MTB_{t-1}</i>	-0.001	-0.72	0.469	-0.002	-0.85	0.394
<i>LEV_{t-1}</i>	-0.116 *	-1.75	0.081	-0.146 **	-1.99	0.047
<i>ROA_{t-1}</i>	-0.002	-1.30	0.194	-0.001	-0.43	0.664
<i>ΔROA_{t-2; t-1}</i>	0.570 *	1.83	0.068	0.631 **	2.16	0.031
<i>GDWL_Ac_{t-1}</i>	-0.030	-0.93	0.352	-0.031	-0.83	0.409
<i>ln(Frequent)_t</i>	0.004	0.72	0.472	0.010	1.30	0.193
<i>Public_t</i>	0.004	0.38	0.705	-0.001	-0.11	0.914
<i>ΔDACC_{t-1, t+1}</i>	0.000	0.69	0.489	0.001	1.58	0.115
<i>ΔGDP_t</i>	0.003	1.39	0.163	0.002	0.86	0.391
<i>TAX</i>	-0.012	-0.16	0.874	0.023	0.20	0.843
<i>UNEMP_t</i>	0.004 **	2.03	0.043	0.005	1.63	0.103
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
Constant	0.034	0.66	0.512	0.019	0.3	0.767
N		1,983			1,481	
Adjusted R ²		0.395			0.465	

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

t is the year of completion of the transaction. See Appendix A for variable definitions. t-stats are clustered by acquirers.