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Cross-Border M&A: Cultural Disparities and the Associated Wealth Effects

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Abstract

This study employs event-study methodologies to examine the stock price behaviors of US target firms surrounding the 1996–2005 cross-border M&A events related to corporate offers. We further apply factor analysis with country fixed-effect specifications to identify the determinants that may significantly contribute to the abnormal stock performance associated with cross-border M&A. While the sample target firms are all headquartered in the US, the foreign corporate bidders are grouped into various subsamples based on their countries of origin and presumably distinct cultures. Our evidence suggests that cultural disparities could play an important role in determining stock price performance around M&A public offer announcements.

Key words: M&A; cultural disparities; event studies; wealth effects

JEL classification: F21; G15; G34

1. Introduction

During the past few decades, the US corporate world has experienced various waves of mergers and acquisitions (M&A) both domestically and from abroad. As Kester (2003) succinctly puts it, in the late 1980s, Japanese entrepreneurs were known for their buying spree in the US, making many high-profile acquisitions of real estate and companies (e.g., Mitsubishi Estate Co.'s purchase of the Rockefeller Center in New York, Dai-Ichi Kangyo Bank's acquisition of CIT, Sony's acquisition of Columbia Pictures Entertainment, and Matsushita Electric Industrial Co.'s acquisition of MCA Inc.). Such acquisitions of US businesses by Japanese companies provoked public concerns in America of "foreign economic aggression" and thus became a major political issue. The US government's pressure, for example, scuttled the efforts of Fujitsu Ltd. to acquire Fairchild Semiconductor in 1986.

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While the Japanese cross-border M&A activities later slowed down along with Japan's economic growth, enterprises from other nations continue to make efforts to expand their operations through M&A expansions in the US. Among such nations are emerging economic powers that include China and India. During the late 1990s and early 2000s, Chinese companies made various attempts to acquire or merge with big foreign corporations, including some US corporations. However, during such M&A processes the Chinese bidders frequently encountered strong political pressure from the US government. Under the Omnibus Trade & Competitiveness Act of 1988, Section 721 (the "Exon-Florio Amendment" to the Defense Production Act of 1950), foreign direct investment (including M&A) in the US is subject to a review by the Committee on Foreign Investment in the US (CFIUS). The purpose of the review is to determine whether the sale of a business to a foreign owner threatens to impair US national security. The amendment authorizes the President, or his designee, to investigate foreign acquisitions of US companies to determine their effects on national security. It also authorizes the President to take such action as he deems appropriate to prohibit or suspend such an acquisition, and the President's findings are not subject to judicial review. In February 1990, the CFIUS forced the China National Aero-Technology Import & Export Corporation to withdraw from bidding for MSMCO, a US civil aircraft parts supplier. In 2005, CFIUS probes also jeopardized the proposed purchase by Lenovo of IBM's PC business and forced the withdrawals of Haier from acquiring Maytag and of China National Offshore Oil Corporation (CNOOC) from acquiring Unocal. Even Hong Kong-based multinational conglomerates can become victims of the CFIUS. One example is that which took place in April 2003, when Hutchison Telecommunications, a subsidiary of Hutchison Whampoa Ltd., was also forced to withdraw its proposed acquisition of a 30.75% stake in Global Crossing, a US telecom. Meanwhile, entrepreneurs from India successfully completed a series of mergers and acquisitions in the US, especially in the software and steel industries.

Along with the continuing trend in cross-border mergers and acquisitions, the successes or failures in terms of the outcomes of such corporate offers and their determinants have been brought to public attention. Among the possible driving forces, cultural disparities between the acquirer's and the target firm's country could be influential. The success and failure of cross-border M&A activity, particularly in the US, plus the associated economic impact, should be a very interesting research topic for both practitioners and academia. Thus, the major purpose of this paper is to examine whether the variations in these cross-border-M&A-associated effects should be significantly attributed to differences in culture, including the political system, language, religion, business orientation, and market openness. If a significant cultural disparity impact persists in international M&A, global corporate acquirers and investors might need to adjust their pricing decisions for associated risk premiums.

The remainder of this paper is organized as follows. Section 2 discusses previous related research. Section 3 describes sample selection criteria, data sources, and methodology. Empirical results are presented in Section 4. Section 5 concludes.

2. Literature Review

The announcement and post-event effects of M&A have been widely studied in the existing research literature. On US M&A activity see Agrawal et al. (1992),

Healy et al. (1992), Hubbard and Palia (1999), Holmstrom and Kaplan (2001), and Rahim and Ahmed (2003). On UK M&A activity see Franks and Harris (1989). On Japanese M&A activity see Hoshino (1982) and Pettway and Yamada (1986) Some studies (e.g., Cremer, 1993; Murray et al., 2000; Valsic and Stertz, 2000) specify the importance of cultural harmony (conflict) in the success (failure) of corporate mergers. Using laboratory experiments, Weber and Camerer (2003) argue that the financial performance of two merged firms typically decreases during the post-merger period, and both merger partners tend to overestimate the post-merger performance but underestimate the difficulties caused by organizational cultural conflicts between firms.

Compared with domestic M&A activity, international M&A activity is studied considerably less frequently or thoroughly, and research on the relevance of "off-financial-statement" factors, such as cultural conflicts in international M&A activity, is even less common. Fuller et al. (2002) and Aktas et al. (2006) find that psychological factors, such as CEO hubris and the learning curve, could contribute significantly to a declining trend in the cumulative abnormal return (CAR) of US-listed acquirers that targeted US and non-US firms with completed deals during the 1990s. Regarding cultural variations, Stulz and Williamson (2003) document that variations in investor right protection across countries is to a great extent attributable to differences in culture, particularly in terms of the main religion and language. For example, their evidence indicates that Catholic and Spanish-speaking countries tend to protect creditor rights less well than Protestant and English-speaking countries. Chakrabarti et al. (2005), using a sample of more than 400 cross-border mergers and acquisitions during the 1991–2000 period, 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." In addition, international M&A deals tend to perform better when (a) cash bids are used and (b) acquirers are from stronger corporate governance regimes than their targets. However, the authors tend to only focus on successful M&A deals and the associated post-merger performance without addressing unsuccessful M&A deals, the possible determinants of cross-border M&A successes and failures, or the effects of cultural disparity on M&A outcomes. One may find that cultural disparity has a negative impact on the final success of the cross-border M&A activity, thereby affecting the stock market performance of both firms in both the short run and long run.

Firms from developed countries (e.g., the US, Western European nations, Canada, Australia, New Zealand, and Japan) have long dominated the international M&A market, in which they typically play the acquirer role. For example, (a) in February 2001, the Germany-based online consulting firm SAP SI put in a bid to acquire US-based Prescient Consulting Inc., (b) in February 2006, Japan-based Toshiba Corp. bid $5.4 billion to acquire the nuclear power plant manufacturer Westinghouse, and (c) in October 2006, UK-based Carphone Warehouse bid to acquire the Time Warner's AOL internet business in the UK for £370 million.

On the other hand, firms from emerging economic powers (e.g., China and India) have been joining the list of acquirers with increasing aggressiveness, even targeting some large and well-known corporations in developed countries such as the US. Some of the most recent M&A public offers from China include: (a) in May 2005, Lenovo purchased IBM's PC business for $1.7 billion, (b) in June 2005, Haier bid $1.28 billion for Maytag, (c) in June 2005, CNOOC offered $18 billion in cash for Unocal, and (d) in March 2007, a leading Chinese IT firm, Hisoft Technology International, announced its acquisition of California-based software company

Envisage Solutions. Some of these M&A deals were successfully completed, some are still ongoing, and some eventually failed. The M&A offers from India include: (a) in March 2005, Mittal Steel announced the acquisition of US International Steel Group and (b) in February 2007, Caritor Inc. announced that it was acquiring Keane Inc., a leading American business process and IT services firm, for an all-cash purchase price of approximately $854 million.

As the economic strengths of China, India, and other developing countries continue to develop, firms from those countries are expected to more frequently play the role of international acquirer in the foreseeable future. However, the short-run outcomes (success or failure) and the associated wealth effects of such cross-border M&A efforts made by developing countries on the targeted developed countries, as well as the long-run post-event performance (regardless of whether the M&A activity is successful or not), might significantly depend on the level of cultural harmony or conflict between the two nations in which the acquirer and the target are located. There are no published research works in this area so far, and this study is the first attempt to fill this gap.

3. Sample, Data, and Methodology

3.1 Sample Construction

We employ event-study methodology to investigate (a) stock price performance surrounding the announcement of a cross-border M&A public offer with a firm in a developed country being the target and (b) post-event stock price performance for both firms in the long run. Weber and Camerer (2003, p. 402) state that "Culture is usually thought of as a general shared social understanding, resulting in commonly held assumptions and views of the world." To evaluate the possible impact of cultural disparity, we divide the sample M&A deals into the subsamples in Table 1. For all subsamples, the target firms are headquartered and exchange-listed in the US.

If the "cultural disparity effect" hypothesis is valid, a significant difference in the US target firm stock price performance should be expected across these five subsamples of M&A bid offers, after controlling for important industry- or firm-specific pricing factors. Fama and French (1993) focus on pricing factors such as firm beta, size, and market-to-book and/or price-earnings ratios, while other typical control factors include firm leverage, profitability, solvency, operating (asset usage) efficiency, and growth opportunities. In addition, provided that the projected M&A activity (or other financial transaction) is completely or partially denominated in foreign currencies, foreign exchange risk should also be regarded as one of the security pricing factors, and thus should be adjusted for as well (Bekaert and Hodrick, 1992; Brennan and Xia, 2006).

Table 1. M&A subsamples to assess cultural disparity

Subsample	Acquirer nation(s)
1	UK, Canada, Australia, or New Zealand
2	EU member nations other than the UK
3	Japan
4	India
5	China

3.2 Data Sources and Descriptive Statistics

The sample period extends from January 1996 through December 2005, during which time both developed and emerging market economies experienced business cycles, and domestic and cross-border mergers and acquisitions intensified to an unprecedented level. We searched the *Wall Street Journal Index* covering the studied decade and found announcements of 137 foreign bids for US target firms with bidders from the five subsamples (we found few bids from China or India for US firms prior to 1996). In order to measure industry- or firm-specific pricing factors that might need to be adjusted for, the financial statements for each involved firm (both the acquirer and the target) were obtained from various online database services regarding corporate fundamentals (e.g., COMPUSTAT for US-listed firms, Xinhua Finance China Insight for Chinese firms, and Thomson Financial's Worldscope Fundamentals for about 40,000 public companies around the world). In addition, in order to measure market values, daily stock prices were acquired either from the CRSP database (for US firms), from DataStream International's database (for non-US firms), or directly downloaded from the web (e.g., Yahoo! Finance and Historical Prices). To measure foreign exchange risk, cross-currency exchange rate data were accessed from the web (e.g., University of British Columbia's Pacific Exchange Rate Service). In DataStream databases, foreign market indices were market-value-weighted and include dividends and contributions, and they cover the group of representative large firms for each country examined. Exchange rates were recorded in terms of dollars per unit of foreign currency.

Table 2 summarizes key descriptive statistics for US target firms, including their beta values, market capitalizations (sizes), and market-to-book ratios reported at the end of the pre-offer year. Among the five subsamples in our sample period, acquirers from China bid for the fewest US firms (7 targets) but with the largest target size ($3.185 billion) and greatest market-to-book ratios (3.545:1) on average. Indian acquirers bid for 9 US target firms with the second greatest market-to-book ratios (2.733:1) on average.

Table 2. Key Descriptive Statistics of Sample Foreign M&A Offers for US Target Firms: Target Firm Beta, Size, Market-to-Book Ratio based on Pre-Offer End-of-Year Reports

	Subsample 1	Subsample 2	Subsample 3	Subsample 4	Subsample 5
Bids					
	40	47	34	9	7
Beta					
Mean	1.117	1.280	1.086	1.238	1.162
Std. Dev.	0.482	0.561	0.502	0.586	0.677
Size ($ bil.)					
Mean	1.480	0.928	1.365	1.213	3.185
Std. Dev.	1.027	0.636	0.864	0.782	1.729
M/B Ratio					
Mean	1.912	2.267	2.528	2.733	3.545
Std. Dev.	1.464	1.531	1.590	1.634	1.882

3.3 Stock Price Performance Model

In event studies, abnormal returns can be estimated using the market model and/or the risk-adjusted model, with the specific stock market index corresponding

to an acquiring/target firm's originating country being the respective benchmark. We therefore need to decide the appropriate model framework for estimating the valuation impact of cross-border M&A events on stock performance. According to researchers such as Krishnan and Laux (2004), there are three major alternatives to measure the excess or abnormal stock return: buy-and-hold abnormal returns (BHAR), cumulative abnormal returns (CAR), and Fama-French-adjusted (with 3 risk factors) returns (FFAR). Existing researchers argue that both BHAR and CAR are merely market-adjusted, and only FFAR is risk-adjusted (for beta, size, and the book-to-market ratio). Moreover, CARs tend to be biased upward relative to long-term stock performance, while BHARs (particularly those over the 3-5 year horizon) could be associated with significant misspecification problems in the small sample distribution of long-term returns. Our study focuses on the around-event-date stock price performance, and the sample size of cross-border M&A-involved firms is rather limited (below 100 for each subsample). Consequently, we employ only the CAR approach to measure stock price reactions. In order to model the stock price performance surrounding the cross-border M&A offer announcement, we apply the CAR approach as follows:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}, \tag{1}$$

where R_{jt} measures the observed log return (i.e., $R_{jt} = \ln P_{jt} - \ln P_{jt-1}$) for firm j on day t, R_{mt} represents the observed return for the market portfolio (the CRSP equally weighted index) on day t, and the residual term, ε_{jt}, is a zero-mean randomly distributed error term. The ordinary least squares (OLS) regression estimate for (1) results in a measure for the abnormal return:

$$AR_{jt} = R_{jt} - \left(a_j + b_j R_{mt}\right), \tag{2}$$

which indicates the differences between the actual and OLS-predicted returns for firm j on day t.

The mean abnormal return across firms for time t is:

$$MAR_t = \frac{1}{N}\sum_{j=1}^{N} AR_{jt}, \tag{3}$$

where N is the number of firms examined. The CAR is the sum of the mean abnormal returns over the assumed estimation interval of event incidence:

$$CAR_{t,T} = \sum_{t=1}^{T} MAR_t, \tag{4}$$

where T is the number of time periods.

If an event announcement does not produce a significant value effect, the CAR follows a normal distribution process. That is, it should fluctuate randomly around a zero mean, with no observable time pattern. However, considering that the cross-border M&A may be denominated in foreign currencies, the foreign exchange risk needs to be incorporated into the equity pricing model. Therefore, the market model in (1) and (2) can be modified as:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_j EX_{jt} + u_{jt}, \tag{5}$$

$$AR_{jt} = R_{jt} - \left(a_j + b_j R_{mt} + c_j EX_{jt}\right), \tag{6}$$

where EX_{jt} measures the return (percentage change) in the bilateral exchange rate corresponding to day t between the acquirer's home currency and the US dollar.

The pricing model can be further extended by controlling for other important firm- and industry-specific characteristics that have been found to be significantly influential in driving equity returns (e.g., firm beta, size, and the market-to-book ratio, as implied by Fama and French's three-factor model). Eventually, we also apply a cross-section factor analysis by regressing the estimated around-event CAR for each firm on its corresponding firm-, industry-, and country-specific characteristics. For example, the factor analysis regression model can be written as:

$$\begin{aligned} CAR_j = {} & \lambda_0 + \lambda_1 BETA_j + \lambda_2 SIZE_j + \lambda_3 MB_j + \lambda_4 CULTURE2_j \\ & + \lambda_5 CULTURE3_j + \lambda_6 CULTURE4_j + \lambda_7 CULTURE5_j + v_j, \end{aligned} \tag{7}$$

where $BETA_j$, $SIZE_j$, and MB_j measure firm j's pre-event-year systematic risk level, market capitalization, and market-to-book-value ratio. Here $CULTURE2_j$, $CULTURE3_j$, $CULTURE4_j$, and $CULTURE5_j$ represent dummy variables that equal 1 if the acquiring firm j is in subsample 2, 3, 4, or 5, and zero otherwise. Subsample 1 is employed as the reference group. By testing the statistical significance of the coefficients λ_4, λ_5, λ_6, and λ_7, we examine whether a bidder's cultural background is a significant factor in determining the CAR, i.e., whether the cultural disparity across different countries may be associated with material differences in the stock price performance related to the cross-border M&A activity targeting the US firm.

To minimize the potential statistical problems of heterogeneity and/or model misspecification in cross-country regressions, we employ a country fixed-effect specification instead of OLS estimates in the factor analysis regression (7) and apply Ramsey's (1969) RESET test for omitted variable bias.

4. Empirical Results

4.1 CAR before Adjusting for Foreign Exchange Rate Risk

Table 3 summarizes the event-study regression results regarding the around-event-date MAR and CAR of US-based target firm stocks. Before the cross-border M&A bid announcement date, there were some significant observations in terms of US target firm stock price gains for subsample 1 on Day −1, for subsample 2 on Days −3 and −1, for subsample 3 on Day −9, and for subsample 5 on Day −7. On the bid announcement date, subsamples 3 and 4 are associated with significant abnormal returns (1.324% and 1.748% on Day 0, respectively). After M&A offers are announced, only subsample 5 is accompanied by somewhat significant price reactions (−1.223% on Day 6).

As far as the CARs were concerned, the US-based target firms in our sample experienced (a) significant cumulative gains (at the 5% and 10% levels) in stock prices over the 3-day period [−1, +1], the 11-day period [−5, +5], and the 21-day period [−10, +10] for M&A offers made by subsample 1, 2, or 4 bidders, (b) significant cumulative gains (at the 5% level) in stock prices over the 5-day pre-event period [−5, −1] for M&A offers made by subsample 2 bidders, and (c) cumulative losses (though statistically insignificant) in stock prices over the 5-day post-event period [+1, +5] for M&A offers made by subsample 5 bidders. Specifically, for those M&A offers made by subsample 5 bidders, the post-announcement 5-day CAR more than offset the pre-announcement 5-day CAR on the US target firm stocks, suggesting that the American investors react relatively less positively to such offers than to offers made by firms in the other subsamples. It appears to us that with the variations in foreign M&A bidders' cultural origins, there exist some differences across US target sample firms in terms of the observed significant stock price abnormal performance surrounding the M&A offer announcements.

Table 3. Mean and Cumulative Abnormal Returns on US Target Firm Stocks Surrounding Foreign M&A Offer Announcements, without Adjusting for Exchange Rate Fluctuations

	Subsample 1	**Subsample 2**	**Subsample 3**	**Subsample 4**	**Subsample 5**
Day	MAR or CAR (%)	MAR or CAR (%)	MAR or CAR (%)	MAR or CAR (%)	MAR or CAR (%)
−10	0.298	−0.332	0.492	0.330	0.042
−9	0.079	0.216	1.532**	0.774	−0.764
−8	−0.323	0.100	−0.214	0.243	0.535
−7	−0.552	0.845	−0.735	0.055	1.382*
−6	0.820	−0.493	0.378	−0.058	−0.342
−5	−0.210	0.365	−0.519	−0.077	−0.969
−4	0.094	−0.103	0.057	1.039	0.646
−3	−0.255	2.021***	0.421	0.190	−0.459
−2	0.603	−0.089	1.143	0.527	0.693
−1	2.490***	1.835***	−0.573	1.031	0.195
0	0.386	0.931	1.324*	1.748***	0.874
+1	0.075	−0.334	0.255	0.261	−0.523
+2	−0.622	0.605	−0.844	−0.120	−0.894
+3	0.356	0.264	0.243	0.254	0.507
+4	−0.142	0.432	0.592	0.772	−0.442
+5	0.990	−0.336	0.161	−0.088	0.689
+6	0.189	0.056	−0.673	−0.309	−1.223*
+7	0.372	0.435	−0.254	0.401	0.304
+8	0.018	−0.254	0.892	0.319	0.442
+9	−0.309	0.461	0.354	0.408	−0.096
+10	−0.077	0.109	−0.150	0.130	0.332
[−1, +1]	2.951**	2.432**	1.006	3.039**	0.546
[−2, +2]	2.932	2.948	1.305	3.447	0.345
[−5, +5]	3.765*	5.591**	2.260	5.537**	0.317
[−5, −1]	2.722	4.029**	0.529	2.710	0.106
[+1, +5]	0.657	0.631	0.407	1.079	−0.663
[−10, +10]	4.280*	6.734*	3.882	7.829*	0.929

Note: *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

4.2 CAR after Adjusting for Foreign Exchange Rate Risk

Given the possible exchange rate risk that underlies cross-border M&A activity, in which foreign currency may be involved in the proposed transactions, one may wonder whether the observed abnormal stock returns, if any, could be attributed to the foreign exchange market fluctuations instead of the stock price movements themselves in term of US dollars. We thus adjust the abnormal stock returns for changes in the foreign bidder's home currency rates, as specified in (1) and (2) above.

Table 4 summarizes exchange-rate-risk-adjusted results regarding the around-event-date MAR and CAR of US-based target firm stocks. Even after accounting for exchange rate fluctuations, the CAR estimates generally resemble those listed in Table 3. There are some cases of shifts in the level of significance. For example, before adjusting for exchange-rate risk, the [−10, +10] CAR for subsamples 1, 2, 3 and 4 are positively significant at the 10% level, positively significant at the 10% level, positive but insignificant, and positively significant at the 10% level, respectively; but after the exchange-rate risk adjustment, the [−10, +10] CAR for those subsamples become positively significant at the 5% level, positively significant at the 5% level, positively significant at the 10% level, and positively significant at the 5% level, respectively. The CAR over the same 21-day event window for subsample 5 remains positive but insignificant after adjustment is made for the Chinese RMB rate. One may note that China's exchange rate system was still largely pegged to the US dollar during our sample period; thus movements in the Chinese currency rate may be weak in explaining the stock price performance subsample 5.

4.3 Cross-Section Factor Analysis

Next, we conducted factor analysis by testing the model (3). Results are summarized in Table 5. In terms of the cultural disparity factors, there are multiple observations of coefficient estimates (λ_4 through λ_7) that are significantly different from zero, implying that when a cross-border M&A offer is announced, the foreign bidder's cultural disparity factor could play a significant role in determining the signs and/or magnitudes of the US target firm's stock price behavior.

Specifically, compared with subsample 1, 2, and 4 are associated with a significantly greater CAR in US target firm stocks, while subsamples 3 and 5 are associated with a significantly lower CAR for US target firm stockholders. When the examined event window is narrowed to [−1, +1], subsamples 2 and 4 no longer significantly outperform subsample 1, while subsamples 3 and 5 still significantly underperform subsample 1. When the examined event window is widened to [−10, +10], subsamples 2 and 4 still significantly outperform subsample 1, subsample 3 no longer significantly underperforms subsample 1, but subsample 5 still significantly underperforms subsample 1.

One of the interesting findings in this study is that the cross-border M&A offers made by Chinese bidders on several occasions did not cause price gains for US target firm stocks to be as significantly positive as offers made by bidders from Japan, Canada, Australia, New Zealand, the UK, other European Union member nations, or India. A possible explanation for this phenomenon is that, compared with the other countries in our sample, China's business culture (and perhaps also political culture) is far more distinct from that of the US. Given the offer announcement that can be made, such a considerable cultural disparity between the bidder and the target firms could potentially impair the likelihood of a successful

completion of an M&A deal in the end, as indicated by Haier abandoning its attempt to acquire Maytag and by CNOOC no longer seeking to acquire Unocal. If US stock market participants expect that such a potential cultural conflict could "kill the deal," they might reasonably feel more skeptical about the M&A activity's final approval and thus become less optimistic about the US target firm's stock gain prospects.

Table 4. Mean and Cumulative Abnormal Returns on US Target Firm Stocks Surrounding Foreign M&A Offer Announcements, after Adjusting for Exchange Rate Fluctuations

	Subsample 1	**Subsample 2**	**Subsample 3**	**Subsample 4**	**Subsample 5**
Day	MAR or CAR (%)	MAR or CAR (%)	MAR or CAR (%)	MAR or CAR (%)	MAR or CAR (%)
−10	0.725	0.290	−0.189	0.301	−0.639
−9	−0.118	0.520	1.288*	0.804	−0.802
−8	−0.429	−0.203	0.534	0.466	0.448
−7	−0.280	0.744	0.098	0.421	1.370*
−6	0.689	−0.159	0.920	0.381	−0.401
−5	0.113	0.299	−0.322	−0.012	−0.772
−4	−0.127	0.320	0.440	1.118	1.108
−3	−0.366	1.795**	0.314	0.190	−0.695
−2	0.904	0.196	1.520*	0.858	0.570
−1	1.887**	2.093***	−0.662	1.116	0.322
0	0.502	0.488	1.290*	1.509**	0.840
+1	−0.290	0.555	0.369	0.762	−0.388
+2	−0.444	−0.329	−0.659	−0.494	0.709
+3	0.489	0.750	−0.518	0.116	0.228
+4	0.406	−0.232	0.709	0.499	−0.792
+5	0.753	0.494	0.325	0.410	0.150
+6	−0.280	−0.153	−0.723	−0.438	−1.380*
+7	0.638	0.562	0.114	0.648	0.465
+8	0.603	−0.503	0.790	0.144	0.340
+9	−0.218	0.625	0.480	0.553	0.030
+10	0.255	0.322	0.220	0.421	0.525
[−1, +1]	2.099**	3.136**	0.997	3.387**	0.774
[−2, +2]	2.559	3.003	1.858	3.751	2.053
[−5, +5]	3.827*	6.429**	2.806*	6.071**	1.280
[−5, −1]	2.411	4.703**	1.290	3.270	0.533
[+1, +5]	0.914	1.238	0.226	1.292	−0.093
[−10, +10]	5.412**	8.474**	6.338*	9.769**	1.236

Note: *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5. Associations between Abnormal Returns after Adjusting for Exchange Rate Fluctuations and Possible Pricing Factors (Beta, Firm Size, Market-to-Book Ratio, and Cultural Disparity)

CAR	λ_0	λ_1	λ_2	λ_3	λ_4	λ_5	λ_6	λ_7	R^2
[0, 0]	0.617	0.735***	0.928***	0.152**	0.086	0.209**	0.246**	0.078	0.475
[−1, +1]	1.386	0.554***	1.033***	0.089*	0.048	−0.255**	−0.039	−0.307**	0.575
[−2, +2]	1.76*	0.520***	1.105***	0.233**	0.035	−0.029	0.154*	0.009	0.452
[−5, +5]	2.72**	0.611***	0.935***	0.078*	0.22**	−0.284**	0.341**	−0.420***	0.542
[−5, −1]	1.627	0.852***	0.879***	0.115*	0.18*	−0.174*	0.077	−0.294**	0.523
[+1, +5]	0.477	0.391***	1.082***	0.140**	0.055	−0.209**	0.046	−0.392***	0.578
[−10, +10]	4.164***	0.466***	1.159***	0.103*	0.198**	0.063	0.176**	−0.333**	0.647

Notes: *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Moreover, the results from Ramsey's (1969) RESET test fail to reject the null hypothesis at the 10% level (p-values range from 0.153 to 0.282), suggesting there is little evidence of misspecification in our country fixed-effect regression model.

5. Conclusions

This study examines stock price reactions of US target firms to the announcements of cross-border M&A public offers made by foreign corporate bidders during the 1996–2005 period. While the sampled target firms are all headquartered in the US, the foreign corporate bidders are grouped into various subsamples based on their country origins with presumably distinct cultures. The event-study results indicate that (1) there exists evidence of significant price reactions (in terms of CAR) for the sample US target firms during the pre-announcement window, the post-announcement window, and the announcement date and (2) the occurrences of such significant CAR vary across subsamples of M&A offers made by foreign bidders from different cultures. Such findings remain robust even after the foreign exchange rate risk is priced in the abnormal return estimation model.

In order to identify determinants that may significantly contribute to the abnormal stock performance associated with cross-border M&A activity, we apply cross-section factor analysis. We find that, in addition to the well-examined firm beta, size, and market-to-book ratio, the cultural disparity between different M&A bidder groups is another significant pricing factor that helps explain variations in target firm stock performance surrounding M&A offer announcements. Hence, global corporate acquirers and investors may consider adjusting their pricing models for cultural-disparity-associated risk premiums. Future study related to cross-border M&A activity may focus on the investigation of stock price behavior, not only for target firms but also for foreign bidder firms and not only surrounding the offer announcement dates but also throughout the M&A approval process and final outcome.

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