7-8-2015

Strategic Similarity and Acquisition Outcomes at the Target: Evidence from China's Beer Industry

Yuping Zeng
Southern Illinois University Edwardsville, yzeng@siue.edu

Timothy Schoenecker
tschoen@siue.edu

Recommended Citation

Zeng, Y. P. and Schoenecker, T. S. Strategic Similarity and Target Performance in Horizontal Acquisitions: Evidence from China's Beer Industry. Asian Business and Management, July 8, 2015.

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Abstract:

This study investigates the effect of horizontal acquisitions on target firms in China's context. We examine how competitive and organizational similarity jointly affect cost savings, revenue growth and profitability improvement at the target in horizontal acquisitions. Using a dataset containing information on acquired firms in China's beer industry, we find that the way in which competitive similarity impacts on cost savings at the target depends on organizational similarity and the type of cost that is examined. Additionally, competitive dissimilarity is found to result in higher revenue growth and profitability improvement at the target.

Key words: horizontal acquisition; strategic similarity; target outcomes; China

Introduction

Horizontal acquisitions (HAs) continue to be a common strategic action taken by firms to grow and expand (Chen and Young, 2010; UNCTAD, 2012). However, despite their popularity, HAs do not always lead to positive outcomes – previous studies have reported a failure rate among HAs as high as 50 per cent (e.g. Papadakis and Thanos, 2010; Schoenberg, 2006). The high failure rate of HAs (and other types of acquisitions) has triggered a significant amount of research examining the determinants of acquisition outcomes (for reviews, see Cartwright and Schoenberg, 2006; Haleblian *et al*., 2009). The extant research, however, has predominantly focused on acquisitions conducted by firms in developed countries, leaving acquisitions in transition economies such as China under-examined. This study fills this research gap by examining HAs occurring in China's context. Furthermore, prior studies have focused primarily on outcomes at the acquirer or combined firm, whereas the effects of the HA on the target's post-acquisition operations remain under-investigated. This study addresses this need by examining cost savings, revenue growth, and profitability specifically at the acquired firm.

Similar to the experience of other countries transitioning from a centrally-planned to a market-oriented economic system, acquisitions in China usually occur against a background of government efforts to privatize or restructure state- or collectively- owned firms (Sheng, 1999; Xu *et al.*, 2010; Zeng *et al.*, 2013). Because most firms in transition economies are not freely tradable, the seller often plays a determinant role in the occurrence of acquisitions in these economies (Zeng *et al*., 2013). In particular, since some key stakeholders (e.g. supervising government, labor unions, and in some cases, managers) will continue to be affected by the target's operations post-acquisition, their selling decision (e.g. to whom to sell and under what conditions) is often driven by the target's long-term prospects rather than receiving the highest selling price (Antal-Mokos and Toth, 2007;

Darskuviene, 2007; Meyer, 2002; Sheng, 1999; Uhlenbruck and De Castro, 1998). Furthermore, the target's stakeholders may also impact on its post-acquisition operations. For example, due to concerns over employment and local economic development, the local government may restrict layoffs at the target and encourage the acquirer to make further investments into the target, using mechanisms such as government loans and tax breaks (Sheng, 1999; Uhlenbruck and De Castro, 2000).

Given the important roles played by the target's stakeholders and their interests in the target's long-term prospects in China and other transitional economies, it is meaningful to understand factors impacting on the target's post-acquisition performance. In particular, for managers of the acquiring firm, such an understanding may be beneficial in two ways. First, these managers may be able to make proposals that are attractive to suitable targets, based in part on the likelihood of a more promising future for their business. Secondly, they may be able to better interact with key stakeholders of the target during the integration process, which consequently can lead to better acquisition performance.

Nevertheless, extant studies have focused primarily on the performance of the acquirer, and little is known about how the target performs after the acquisition, in particular in the case of HAs.[1] This study overcomes this shortcoming by examining HA outcomes at the acquired firm. We focus on the effect of strategic similarity, a factor acknowledged as the most likely predictor of HA outcomes (Altunbas and Marques, 2008; Capron *et al.*, 1998; Swaminathan *et al.*, 2008).

Generally speaking, strategic similarity refers to similarities and differences in the combining firms' competitive activities as well as organizational features such as management style and structure. It has been posited that strategic similarity increases the potential for cost-saving synergies (Capron, 1999; Shelton, 1988) and facilitates the integration process (Datta, 1991; Ramaswamy,

1997; Swaminathan *et al*., 2008). Meanwhile, it has also been argued that strategic differences increase the likelihood of achieving revenue-enhancing synergies by combining the two firms' resources (Barney, 1988; Harrison *et al.*, 1991; Larsson and Finkelstein, 1999). Taking these two lines of thought into consideration, we examine both cost savings and revenue growth, in addition to profitability improvement, at the target. Additionally, we distinguish the two components of strategic similarity, namely competitive similarity and organizational similarity, and examine their interaction effect.

Typically, an acquired firm's post-acquisition operations cannot be studied with precision, because the financial results of the acquired firm are usually folded into the financial results of the combined entity. However, we are able to continue to track the financial performance of acquired firms due to a unique dataset maintained by the Chinese government that requires financial data to be reported at the plant level.

Our results show that cost savings, revenue growth, and profitability improvement at the target are all negatively related to competitive similarity. Additionally, we find that cost savings at the target are greatest when both competitive and organizational dissimilarity are high. This finding may reflect the realities that acquired firms in China are usually state-owned or former state-owned firms that need significant restructuring and that strategic dissimilarity provides more opportunities for effective changes to take place.

Our study contributes to our understanding of Asian business by examining how an HA target in China may be impacted by the level of strategic similarity between the acquirer and the target firm. Our results show that due to China's background of economic transition, targets acquired by competitively and organizationally different acquirers are likely to perform better than those acquired by more similar acquirers.

Theoretical background

Strategic similarity and HA outcomes

HAs may benefit combining firms by leading to cost-saving synergies, revenue-enhancing synergies, or both (Barney, 2002; Capron, 1999; Capron *et al*., 1998; Walter and Barney, 1990). Cost savings may be the result of economies of scale and scope in various corporate and business-level activities or/and increased bargaining power over suppliers (Eckbo, 1983; Fee and Thomas, 2004; Teece, 1982). Growth in revenues may occur as a result of competency-enhancing synergies that lead to a stronger differentiated position. In turn, this may lead to increased prices or/and higher sales volume (Ahuja and Katila, 2001; Capron, 1999; Dranove and Shanley, 1995; Harrison *et al*., 1991; Saxton and Dollinger, 2004).

The potential magnitude of the combination synergies and the likelihood that they will be captured through an effective integration process are both affected by the degree to which the acquirer and target are strategically similar (Harrison *et al*., 1991; Kusewitt, 1985). While strategic similarity has multiple dimensions, it can be thought of as having two components: competitive similarity and organizational similarity (Jemison and Sitkin, 1986). Competitive similarity refers to the degree to which the two firms' operational and competing activities are alike. It determines the potential value that can be created from combining two firms and the level of integration needed to realize this potential (Homburg and Bucerius, 2006; Jemison and Sitkin, 1986; Larsson and Finkelstein, 1999). Organizational similarity refers to the degree to which two firms' organizational and cultural practices are alike and influences the effectiveness of the integration process (Chatterjee *et al.*, 1992; Datta, 1991; Jemison and Sitkin, 1986).

It has been agreed that organizational similarity positively affects acquisition outcomes by facilitating post-acquisition integration (Jemison and Sitkin, 1986). Empirical studies have generally supported this assertion (Chatterjee, 1986; Datta, 1991; Homburg and Bucerius, 2006). In contrast, divergent views exist regarding the outcomes of combining competitively similar and dissimilar firms.

On the one hand, traditional cost-efficiency theories suggest that competitive similarity between combining firms provides more opportunities to exploit economies of scale and scope, and therefore create more potential for cost-saving synergies (Chatterjee, 1986; Prahalad and Bettis, 1986; Ramaswamy, 1997). On the other hand, several scholars, drawing on the resource-based view of the firm, argue that the combination of firms with different resource configurations is more likely to result in private, unique and inimitable synergies, and therefore can lead to improved performance at the combining firms (Barney, 1988; Harrison *et al*., 1991). It has also been suggested that combining firms with different but complementary resources provides more opportunities to exploit revenue-enhancing synergies through product innovation and market extension (Hitt *et al.*, 1998; Larsson and Finkelstein, 1999).

These divergent perspectives indicate that the effect that competitive similarity has on the combining firms depends on whether cost savings or revenue growth is examined. Specifically, while combining competitively similar firms is likely to lead to more cost savings, the combination of competitive dissimilar firms will likely result in more revenue growth. Against this theoretical background, we examine both cost savings and revenue enhancement at the target.[2]

In addition to affecting acquisition outcomes independently, organizational and competitive similarity may interact with each other as well. Stahl and Voigt (2008) examined the moderating effect that competitive similarity has on the relationship between organizational similarity and

acquisition outcomes. They found that organizational differences are positively related to acquisition performance when competitive similarity is low, but negatively related to performance when competitive similarity is high. Complementing this study, we examine whether the effect that competitive similarity has on cost savings and revenue growth at the target depends on the level of organizational similarity.

Acquisition outcome at the target: a seller's vs. a buyer's perspective

Despite the intense investigation on acquisition outcomes, few studies have examined targets post-acquisition. Among the few that have, the majority focus on the negative impacts of the acquisition (e.g. management departure, employee resistance) (Cannella and Hambrick, 1993; Hambrick and Cannella, 1993; Larsson and Finkelstein, 1999; Walsh and Ellwood, 1991). This reflects the dominance of a buyer's perspective of acquisition, where buyers are viewed as the dominant player and sellers are portrayed as price-driven, reactive and reluctant (Graebner and Eisenhardt, 2004).

However, evidence shows that the emphasis on the buyer's perspective may not always be appropriate, particularly when the target is privately- or state-owned. In their studies of acquisitions involving private technology firms, Graebner and Eisenhardt (2004) found that the seller plays an active role in the acquisition process by selecting desirable buyers that offer long-term strategic fit and organizational rapport. Similar phenomena were found in acquisitions in Eastern European countries (EECs) (Antal-Mokos and Toth, 2007; Darskuviene, 2007). Zeng *et al* (2013) highlighted the determinant role played by sellers in acquisitions in China due to the fact that firms are either stated owned or not publically traded. Finally, Graebner (2004) found that leaders of the acquired firm play critical roles in synergy realization post-acquisition.

These empirical findings have provoked scholars to appeal for the development of a seller's perspective on acquisition (Graebner and Eisenhardt, 2004; Zeng *et al*., 2013). Our focus on the target in the context of a transitional economy (e.g. China) allows us to advance this effort and incorporate the seller's perspective when examining acquisition outcomes. Specifically, when a seller plays an active role in selecting desirable buyers, the managers and other key stakeholders (e.g. local government in China) may be well aware of the sources of potential synergies and likely integration initiatives post-acquisition. They may also negotiate for integration initiatives that are beneficial to the target in the long run as a condition of sale. For example, it has been shown that in acquisitions in EECs, sellers may require buyers to make certain post-acquisition investments in the target (Uhlenbruck and De Castro, 1998, 2000). Additionally, it is likely that stakeholders affected by the long-term prospects of the target may work supportively with the acquirer after the acquisition to achieve the potential synergies. The above arguments suggest that, in contrast to the negative impacts examined in the literature, a target may emerge stronger as a result of acquisition.

Hypothesis development

Competitive similarity and cost savings at the acquired firm

According to traditional cost-efficiency theories, HAs can lead to cost savings through the achievement of economies of scale and, to a lesser extent, economies of scope. Economies of scale are achieved through asset divestitures and eliminating redundant activities and positions (Anand and Singh, 1997; Capron, 1999; Tremblay and Tremblay, 1988). Economies of scope are achieved by spreading a firm's resources and fixed costs across a broader product line (Capron, 1999; Lubatkin *et al.*, 2001; Teece, 1980).

It is likely that all HAs provide an opportunity to capture economies of scale and scope. However, there are likely to be more opportunities for cost savings when the acquiring and target firms are competitively similar. For example, acquiring and target firms that both place great emphasis on marketing and advertising, or both have high degrees of capital intensity, should be more likely to find overlapping skills and activities in their workforces or in their fixed assets. Thus, management will have an easier time redeploying resources across competitively similar firms, reducing operating costs and overhead expenses. Furthermore, from the seller's perspective, the target's key stakeholders may be more likely to recognize potential synergies and support the realization of those synergies when the buyer is competitively similar to the target.

> ***Hypothesis 1***: Competitive similarity will be positively related to post-acquisition cost savings at the target.

Competitive similarity and revenue enhancement at the acquired firm

Competitively dissimilar firms target different customer groups or focus on different geographic markets. Once the HA is complete, then both units (target and acquirer) should have access to a wider array of products (or models), greater marketing resources/knowledge, and different distribution networks. Similarly, each unit should be able to reach a wider array of customers. Further, as shown in Capron (1999), combining firms focusing on different geographic markets may lead to an enhanced innovation capability in the two units. All these factors should lead to opportunities for growing revenue at an increased rate.

Additionally, competitively dissimilar firms (within the same industry) typically place different degrees of emphasis on marketing, product development, etc. Barney (1988) and Harrison *et al.* (1991) argue that unique and inimitable synergies are more likely to be developed between firms that

are competitively dissimilar and have different resource bases. Furthermore, Capron *et al*. (2001) suggest that resource asymmetries between the acquirer and target facilitate resource redeployment and subsequent acquisition performance. Thus, it is more likely that a redeployment of tacit skills and organizational knowledge will take place between the acquirer and target when they are competitively dissimilar. In doing so, the skill and resource bases of both units should be strengthened, likely enhancing growth prospects. Further, from a seller's perspective, because the synergies that can result from combining with a competitively dissimilar acquirer are primarily new growth opportunities, various stakeholders of the target will likely benefit from these synergies and therefore support the integration process.

> ***Hypothesis 2***: Competitive similarity will be negatively related to post-acquisition rates of revenue growth at the target.[3]

Organizational similarity and the HA integration process

While competitive similarity affects the magnitude of the potential synergies that may result from an acquisition, the degree to which these synergies are eventually realized will depend on organizational similarity, referring to the degree to which the acquired and acquiring firms share similar managerial approaches and corporate cultures (Larsson and Finkelstein, 1999; Stahl and Voigt, 2008).

Fully realizing synergies entails significant human interaction and coordination between newly-combined units. Organizational dissimilarity, driven by differences in managerial and corporate cultures, makes these interactions and coordinated activities more difficult to manage. Particularly, Larsson and Finkelstein (1999) report that a high need for integration can lead to more active resistance by employees of both the acquired and acquiring units. Organizational dissimilarity increases mistrust and misunderstanding between managers. Furthermore, studies taking a seller's

perspective have shown that the target's managers value organizational rapport (Graebner and Eisenhardt, 2004). Thus, we expect that organizational similarity will enhance the likelihood that synergies will be realized, regardless of whether they involve cost reduction or revenue-enhancing activities.

> ***Hypothesis 3a***: Greater competitive similarity will lead to a higher likelihood of cost savings at the target when the target and acquirer are organizationally similar.
>
> ***Hypothesis 3b***: Greater competitive dissimilarity (i.e. less competitive similarity) will lead to a higher likelihood of revenue growth at the target when the target and acquirer are organizationally similar.

Competitive similarity and profitability improvement

As evidenced by our first two hypotheses, prior literature suggests that competitive similarity has divergent effects on cost savings and revenue growth at the target; a high level of competitive similarity may lead to more cost savings, but there will be fewer opportunities for revenue growth. In contrast, a low level of competitive similarity may limit opportunities for achieving cost savings, but may lead to faster revenue growth. Because both cost savings and revenue growth can lead to profitability improvement, the relationship between competitive similarity and profitability improvement at the target may depend on whether the combining firms primarily seek cost savings or revenue growth. Specifically, a negative relationship between the two will likely be observed when the acquisition is mainly driven by revenue growth, whereas a positive relationship will be likely when the acquisition is driven by cost savings. Studies of acquisitions involving non-publically traded and state-owned firms show that the seller's decisions about whether to sell and to whom are affected by the target's future growth prospects (Antal-Mokos and Toth, 2007; Darskuviene, 2007;

Graebner and Eisenhardt, 2004). Given that our research context is China, where the majority of firms are either state-owned or not publically traded, we expect that revenue growth is likely to be emphasized during the negotiation and integration process (though cost savings may still be pursued whenever possible). We therefore hypothesize that:

> ***Hypothesis 4***: Competitive similarity will be negatively related to post-acquisition profitability improvement at the target.

Methodology

Sample and data sources

The sample for this study consists of 139 HAs conducted by twenty acquirers in China's beer industry during the period 1999-2006. The beer industry has been frequently used to investigate strategic issues (Hatten *et al.*, 1978; Houthoofd and Heene, 1997; Johnson and Thomas, 1987), providing us with a rich literature to identify key strategic characteristics in the industry. The number of acquisitions conducted by each acquirer in our data ranges from one to 32 (with an average of seven).

We performed several steps to collect acquisition information. First, we reviewed an Annual Industrial Census dataset (hereafter 'census data') provided by the National Bureau of Statistics of China (NBSC). This dataset includes annual demographic and financial information of all state-owned enterprises (SOEs) and non-SOEs operating in China with annual sales revenues of CNY5,000,000 or greater, and has been used by multiple studies (Chang and Xu, 2008; Park *et al.*, 2006). We first identified firms that disappeared from the database or changed their names or/and ownership types, and then checked these firms' websites and media reports to determine if the changes were caused by an acquisition. Second, we reviewed the annual reports of listed companies for information on acquisitions made. Finally, we checked the websites of large unlisted breweries to

identify any possible acquisition activities. We obtained demographic and financial information of the acquiring and acquired firm from the census data.

Dependent variables

Cost savings. We considered savings in three major costs of the target firm: (1) savings in the cost of goods sold that could be achieved via economies of scale in areas such as procurement and production; (2) savings in overhead costs that could be achieved via economies of scale in management; (3) savings in marketing expenses (i.e. expenditures related to marketing and distributing a firm's products) that could be achieved via economies of scale in marketing. These three types of costs account for 90 per cent of an average firm's sales in our sample.

We divided each of the three costs by the target's sales to take consideration of differences in firm size. We then calculated the savings in each type of costs by computing the differences between two years prior to and two years after the acquisition (e.g. savings in marketing expenses = the average of the marketing expenses-to-sales-ratio in the two years prior to the acquisition - the average of marketing expenses-to-sales-ratio in the two years after the acquisition). The larger the variable, the more cost savings occurred at the target. Using a four-year time window to examine acquisition outcomes is consistent with earlier empirical studies (Bruton *et al.*, 1994; Morosini *et al.*, 1998; Zollo and Singh, 2004). The year in which the acquisition occurred was excluded because it was impossible to pinpoint the exact date on which the acquisition was actually finalized (Meeks and Meeks, 1981; Ramaswamy, 1997).

Revenue growth. We measured revenue growth as the percentage increase in the target's sales in the two years after the acquisition from the two years prior to the acquisition (revenue growth = (average

sales in the two years after the acquisition – average sales in the two years prior to the acquisition)/average sales in the two years prior to the acquisition).

Profitability improvement. We measured profitability improvement by calculating changes in the target's return on assets (ROA) from the two years prior to the acquisition to the two years after the acquisition. ROA has been observed as the least sensitive to the upward or downward estimation bias that can be induced by changes in leverage or bargaining power resulting from an acquisition (Meeks and Meeks, 1981).

Independent variables

Competitive similarity. Following previous studies, we operationalized competitive similarity using similarities in key strategic characteristics of the acquirer and target pre-acquisition (Capron *et al*., 2001; Harrison *et al*., 1991; Homburg and Bucerius, 2006; Ramaswamy, 1997). We identified six strategic characteristics based on studies on strategic similarity and studies on the beer industry. The first was marketing intensity. Multiple studies have identified differences in firms' emphases on marketing as an important indicator of differences in their strategies (Finkelstein and Hambrick, 1990; Ramaswamy, 1997; Swaminathan *et al*., 2008). Studies on the beer industry have also identified marketing expenditure as a key strategic variable (Hatten *et al*., 1978; Houthoofd and Heene, 1997; Johnson and Thomas, 1987). We measured marketing intensity as the ratio of marketing expenses to sales.

The second was the newness of plants. Hatten *et al*. (1978) identified this variable as a key strategic variable in the beer industry and found it to be positively related to breweries' performance.

We measured this variable using the ratio of net value to gross book value of a firm's fixed assets. The third strategic characteristic was the level of a firm's current assets, such as receivables, cash, and inventory. Houthoofd and Heene (1997) noted that a firm's commitment to inventories, receivables and cash is important for a differentiation strategy. We calculated this variable using the ratio of current assets to sales.

The fourth strategic characteristic was investment intensity. Houthoofd and Heene (1997) argued that investment intensity has a positive relationship with innovation. Similarly, Johnson and Thomas (1987) suggested that capital and investment intensity capture the differentiating production or technology characteristics of the beer industry. We divided a firm's long-term investment by total assets to obtain its investment intensity. The fifth strategic characteristic was fixed-assets intensity. According to Houthoofd and Heene (1997), this variable may reflect a brewery's efforts on efficiency and search for cost advantages. We measured this variable with the ratio of a firm's fixed assets to total assets.

The last strategic characteristic was a firm's geographic market coverage. Overlap in market coverage has been repeatedly used to measure strategic similarity between combining firms (Capron, 1999; Capron *et al*., 2001; Homburg and Bucerius, 2006). In the beer industry, geographic coverage has also been identified as a key strategic variable (Hatten *et al*., 1978; Johnson and Thomas, 1987). In China, the industry is highly fragmented; a firm usually serves its local market and adjacent cities, owing to high transportation costs and local government protection (Heracleous, 2001; Slocum *et al*., 2006). We therefore defined a firm's market coverage based on the location of its plants.

Following the literature (Deephouse, 1999; Fuentelsaz and Gomez, 2006; Gimeno and Woo, 1996), we measured competitive similarity using a synthesized index calculated based on the above

strategic characteristics. This approach reflects the integrative nature of strategy and increases model parsimony (Deephouse, 1999). We first calculated the Euclidean distance between the acquirer and target on these strategic variables and then normalized the distance variable to the 0-1 range and subtracted it from one to obtain a competitive similarity measure (Gimeno and Woo, 1996). Specifically, the following formula was used:

$$\text{Competitive similarity} = 1 - \frac{\sqrt{\sum_{j=1}^{6} difference\ on\ strategic\ characteristic_j^2}}{\mathbf{Max}\sqrt{\sum_{j=1}^{6} difference\ on\ strategic\ characteristic_j^2}}$$

j : the j th strategic characteristics

For the first five strategic characteristics, the difference between the two firms was calculated using their respective values on each strategic variable in the two years prior to the acquisition. We standardized each variable before calculating the difference.

For difference in the acquirer and target's geographic market coverage, we created an ordinary variable based on their locations. In the census data, the location of a firm is coded with a 6-digit coding system (similar to the zip code system). The first digit represents the region in which the firm is located (the mainland of China is divided into six regions: Huabei, Dongbei, Huazhong, Huanam, Xibei, and Xinan); the first two digits together represent the province; the third and fourth the city (the third digit usually represents the city while the fourth represents a specific district in that city); and the fifth and sixth the county. The ordinary variable was coded 1 if the acquirer and target have exactly the same location code, 2 if only the first five digits of the two firms' location codes are the same, 3 if only the first four digits are the same, 4 if only the first three digits are the same, 5 if only the first 2 digits are the same, 6 if only the first digit is the same and the two firms are in

neighboring provinces, 7 if the first digit is the same, but the two firms are not in neighboring provinces, and 8 otherwise. We also standardized this variable before adding it to the above formula for calculating competitive similarity.

Organizational similarity. Similar to competitive similarity, organizational similarity was measured using key organizational characteristics of the combining firms prior to the acquisition. Key organizational elements that have been identified affecting organizational fit between an acquirer and target include organizational culture (Chatterjee *et al*., 1992; Lubatkin *et al.*, 1999), management style/administrative practices (Datta, 1991; Homburg and Bucerius, 2006; Larsson and Finkelstein, 1999), and reward and evaluation systems (Datta, 1991). These organizational elements often are formed under the influence of the cultural and institutional environments in which a firm is embedded (Lau *et al.*, 2002; Ralston *et al.*, 2008; Tsui *et al.*, 2006). We therefore identified four organizational variables that may capture organizational differences based on China's context.

The first was ownership. In China, firms exist with different ownership structures that underlie differences in organizational culture as well as management systems and styles (Child, 2000; Tsui *et al*., 2006). In general, firms can be divided into three major categories based on their ownership, namely domestically-owned firms, firms with foreign funds, and firms with funds from Hong Kong, Macao, and Taiwan. Within each category, there are sub-categories of ownership type (for example, domestic firms can be divided into state-owned, collectively-owned, etc.). The Appendix provides a list of all ownership types and their corresponding code used by the NBSC in the annual industrial census. Multiple studies have shown that organizational culture and management styles vary across the major ownership types as well as across sub-categories within each major

ownership type (Deshpande and Farley, 2000; Ding *et al.*, 1997; Lau *et al*., 2002; Tsui *et al*., 2006; Wang *et al.*, 2007).

The second organizational variable was firm age. Tsui *et al*. (2006) found that organizational cultural values are affected by firm age, measured as the number of years since a firm was founded. The third organizational variable was the economic development of the province where a firm is located. A contextual reality in China is that there are significant regional differences in economic development. Lau *et al*. (2002) found that this regional difference results in differences in employees' predisposition toward change and development culture. Provincial economic development was measured using *per capita* gross domestic product (GDP).

The fourth organizational variable was employee compensation, which may reflect a firm's reward and evaluation systems. Employee compensation was measured using the total wages and benefits of a firm divided by the number of employees of the firm. Information on provincial *per capita* GDP was obtained from various years' Statistics Year Book of China; information for other organizational variables was obtained from the census data.

Similar to measuring competitive similarity, we measured organizational similarity using a synthesized index calculated based on the above organizational characteristics. We first calculated the Euclidean distance between acquirer and target on the four organizational strategic variables; we then normalized the distance variable to the 0-1 range and subtracted it from one to obtain an organizational similarity measure.

For ownership difference, we created an ordinary variable based on the 3-digit code of ownership types listed in the Appendix. The variable equaled 1 if the two firms have exactly the same ownership code, 2 if only the first two digits of the ownership code are the same, 3 if only the first digit is the same, 4 if one of the two firms is a domestically-owned firm and the other is a firm with

funds from Hong Kong, Macao or Taiwan, and 5 otherwise. We standardized this variable before adding it to the calculation of organizational similarity. For differences in firm age, provincial *per capita* GDP, and employee compensation, we standardized these variables and then calculated the differences between the two firms in the two years prior to the acquisition.

Control variables

For all models, we controlled for the *target's prior-acquisition profitability and the relative size* of the acquired firm with respect to the acquirer. It has been suggested that relative size is positively related to synergy potential (Seth, 1990) and realized synergies (Capron, 1999). Additionally, larger and better-performing targets may enjoy a higher relative standing in the combined company and a lower management departure after the acquisition, reducing detrimental disruptions caused by the acquisition (Cannella and Hambrick, 1993; Hambrick and Cannella, 1993; Very *et al.*, 1997). We measured a *target's pre-acquisition profitability* using its industry-adjusted ROA in the two years prior to the acquisition. Relative *size* was measured as the ratio of the target's sales to the acquirer's sales two years prior to the acquisition.

We also controlled for each acquirer's pre-acquisition profitability, acquisition experience, and nationality (i.e. foreign versus domestic). Managers of more profitable acquirers may be more confident in their abilities and thus more likely to dominate during the integration process (Hambrick and Cannella, 1993). Acquirers' pre-acquisition profitability was measured using its industry-adjusted ROA in the two years prior to the acquisition. Acquirers with greater acquisition experience may be more capable of conducting acquisitions and thus perform better (Hambrick and Cannella, 1993; Zollo and Singh, 2004). Acquisition experience in an acquirer was measured by the number of HAs it had made in the beer industry prior to the focal acquisition. Zeng and Wu (2007)

showed that compared to domestic acquirers, foreign acquirers are more likely to select strategically similar targets. Therefore, we controlled for the acquirer's nationality using a dummy variable equal to 1 if the acquirer is not originally from China and 0 otherwise.

Finally, we controlled for the year in which an acquisition occurred to take consideration of possible macro-level changes that may affect the dependent variables.

Analysis and results

Table 1 presents the descriptive statistics and correlation matrix for all variables. In order to reduce the risk of multicollinearity, we mean-censored the independent and control variables (Aiken and West, 1991). The highest variance inflation factor in the models was 1.1, indicating a low threat of multicollinearity. Because we have multiple dependent variables that very likely have related errors (i.e. integration activities may simultaneously affect costs savings, sales growth and profitability at the target), we applied seemingly unrelated regression (SUR), a statistical technique that solves a set of regression equations simultaneously and allows for error covariance among the equations (Zellner, 1962). Since there are five dependent variables in our study (savings in cost of goods sold, savings in overhead costs, savings in marketing expenses, revenue growth, and profitability improvement), five regressions were run simultaneously at each time. For each dependent variable, the control variables were included in Model 1, competitive and organizational similarity were entered in Model 2, and the interaction term between competitive and organizational similarity in Model 3 (there is no interaction term in the model where target profitability improvement is the dependent variable).

Table 2 tests the relationships between competitive similarity and the three types of cost savings. The dependent variable is savings in cost of goods sold in Panel 1, savings in overhead expenses in Panel 2, and savings in marketing expenses in Panel 3. As shown in Model 2 in Panels 1-3, competitive similarity has a negative effect on cost savings at the target. These results are inconsistent

with Hypothesis 1's prediction of a positive relationship between competitive similarity and cost savings. We will provide possible explanations for these results in the discussion section.

Model 3 of the three panels in Table 2 tests Hypothesis 3a, which predicts that greater competitive similarity will lead to a higher likelihood of cost savings at the target when the target and acquirer are organizationally similar. The interaction term between competitive and organizational similarity has a significant and positive coefficient in all three panels. Because the main effect of competitive similarity is the opposite of our prediction, it is difficult to interpret this interaction effect by simply looking at the sign of the coefficient of the interaction term. Following Aiken and West's (1991) suggestion, we plotted the relationship between competitive similarity and the target's cost savings when organizational similarity is at a high (one standard deviation above the mean) and a low level (one standard deviation below the mean) in Figures 1-3, in order to gain a better understanding of the interaction effect.

As shown in Figure 1, savings in cost of goods sold increase with the increase of competitive similarity when organizational similarity is high, but an opposite relationship applies when organizational similarity is low. Figure 2 shows a similar pattern – a positive relationship between overhead expenses and competitive similarity when organizational similarity is high and a negative relationship when organizational similarity is low. These results are consistent with Hypothesis 3a – organizational similarity facilitates the realization of cost savings resulting from competitive similarity. The patterns in Figure 3, however, do not confirm Hypothesis 3a – there is a negative relationship between savings in marketing expenses and competitive similarity regardless of the level of organizational similarity.

Table 3 reports results for the effect that competitive similarity has on the target's revenue growth. Consistent with the prediction of Hypothesis 2, there is a significantly negative relationship

between competitive similarity and the target's sales growth. Model 3 tests Hypothesis 3b, which predicts that competitive dissimilarity will lead to a higher likelihood of revenue growth at the target when the acquirer and target are organizationally similar. Inconsistent with this prediction, the interaction between competitive and organizational similarity is insignificant.

Table 4 tests the effect of strategic similarity on profitability improvement at the target. Consistent with the prediction of H4, competitive similarity has a significant, negative relationship with the improvement of the target firm's post-acquisition ROA.

Discussion and conclusions

This study was intended to enhance our understanding of the impacts that HAs have on target firms in China's context. Drawing on cost-efficiency theories, the resource-based view of the firm, and a seller's perspective on acquisition, we examined how cost savings, revenue growth and profitability at the target are simultaneously affected by the two components of strategic similarity, namely competitive and organizational similarity. We tested our hypotheses using a unique dataset containing information about acquired firms in HAs in China's beer industry.

Our results (see Figures 1-3) show that although competitively similar targets and acquirers are able to realize minor savings in cost of goods sold and overhead expenses when they are also organizationally similar, much greater cost savings occur when both competitive and organizational dissimilarity are high. What appears to occur is that steep reductions are made in the target's spending (cost of goods sold, overhead, marketing) when target and acquirer compete differently and have different managerial practices and cultures.

One possible explanation of these findings is that many acquired firms in a transitional economy like China are state-owned or formerly-state-owned firms that lack the ability and knowledge to

effectively compete as a market entity (Zeng *et al*., 2013). Significant restructuring of these firms after acquisition is often necessary to transfer them into competitive market entities (Meyer and Estrin, 2001; Meyer & Lieb-Doczy, 2003). Being acquired by a firm that is both competitively and organizationally dissimilar may imply more opportunities for operational restructuring as well as management reform, which in turn leads to production and management efficiency at the target. This explanation is consistent with the negative relationship between the target's pre-acquisition profitability and cost savings in Table 2, which indicates that cost savings are more likely to occur in targets that performed poorly prior to acquisition.

We also found that combining competitively dissimilar firms led to more opportunities for revenue growth at the target. This result supports the stream of literature emphasizing the beneficial effects of strategic differences (Barney, 1988; Harrison *et al*., 1991; Larsson and Finkelstein, 1999). Furthermore, our results show that the realization of this revenue-enhancing synergy does not depend on organizational similarity between acquirer and target. This finding is consistent with the notion that the realization of revenue-based synergies involves less structural change, a low level of resource and activity consolidation, and a high level of autonomy at the target (Ambrosini *et al*., 2011; Stahl and Voigt, 2008; Zaheer *et al*., 2013). All these integration characteristics reduce the likelihood of problems that might arise from organizational differences.

Finally, consistent with our expectation, targets acquired by competitively dissimilar acquirers are found to experience greater post-acquisition profitability improvement. This result may reflect the contextual feature that the target's growth prospects are a key determinant of the seller's decisions concerning the acquisition (e.g. whether to sell and to whom) in emerging markets (Antal-Mokos and Toth, 2007; Darskuviene, 2007). This contextual feature may lead to an emphasis on achieving revenue growth through combining with competitively dissimilar firms.

Our study contributes to the literature on Asian business as well as research on acquisitions. First, although acquisitions in China have been growing significantly since the 1990s, academic investigation of these acquisitions is scarce. The few studies examining acquisitions in China focus on either firms' acquiring/selling strategies (Xu *et al*, 2010; Zeng *et al*., 2013; Zou, 2008) or the stock market's reactions to acquisition announcements (Gaur *et al.*, 2013). As a result, little is known about acquisition outcomes, and in particular outcomes at the target. Our study therefore enhances the literature by comprehensively examining how a target firm may be affected by strategic similarity, a factor that has been identified as the most likely predictor of HA outcomes.

Second, our focus on the target's post-acquisition operations advances the acquisition literature. Although the acquired firm usually becomes a part of the acquiring firm after the acquisition, many of its stakeholders continue interacting with it. Understanding acquisition outcomes from the target's perspective will not only help the acquirer to better intact with these stakeholders, but could also help the target's stakeholders to make better-informed decisions. Particularly in a context like China, where the seller can play an active role in the acquiring and integration process, an understanding of how the target will be impacted by the acquisition may not only facilitate the occurrence of an acquisition, but could also reduce the acquisition price and integration costs (Graebner, 2004; Graebner and Eisenhardt, 2004).

Third, our study also contributes to the acquisition literature by examining cost savings and revenue growth at the target simultaneously. This approach allows us to integrate efficiency theories and the resource-based view of the firm and helps address the inconsistent views on whether combining strategically dissimilar or similar firms is more beneficial (Barney, 1988; Chatterjee, 1986; Harrison, *et al*., 1991; Ramaswamy, 1997). Finally, our study enhances our understanding of the interaction between competitive and organizational similarity, an area that remains

under-explored (Stahl and Voigt, 2008). Our findings of the significant interaction effect between competitive and organizational similarity on cost savings and the insignificant effect between the two on revenue growth indicate that a contingency model is necessary when examining the relationship between strategic similarity and acquisition outcomes.

Our study has important implications for managers. Our findings show that strategic dissimilarity is beneficial to the target in China's context, not only by leading to revenue-enhancing synergies, but also by resulting in more cost savings. Additionally, in contrast to the well-acknowledged importance of organizational similarity in post-acquisition integration, it seems that in a transition economy like China, organizational dissimilarity facilitates the restructuring of the target, which in turn leads to cost savings. Therefore, managers should pay special attention to the potential benefits of strategic differences when evaluating acquisition targets and factors affecting acquisition outcomes.

Our study is not free of limitations. First, although our measures of competitive and organizational similarity were based on key strategic and organizational variables identified in the literature, they may not be able to thoroughly capture these concepts given the secondary nature of our data. Future studies may use survey or interview methods to obtain a more direct measure of these concepts. Second, data availability required that we examine changes in the performance of the target firm for two years following the year of its acquisition. It may be that some changes, particularly those associated with cost reductions, may take longer than two years to be fully realized. Thus, our two-year window may provide only a partially-complete picture of this event. Third, we focused on HAs only in China's beer industry. Although this approach allowed us to avoid complexities that could be caused by differences in industries if HAs in multiple industries were used, the

generalizability of our results needs to be confirmed by future studies using data from different industries.

Notes

1. Ravenscraft and Scherer (1987, 1989) investigated the post-acquisition performance of targets, but did not focus exclusively on horizontal acquisitions.

2. The beneficial outcomes of HA (cost savings, revenue growth, etc.) can occur at either the acquiring or acquired firm (or both). However, our study purposely focuses on effects of the HA at the acquired firm. This focus is not meant to imply that most or all HA effects occur at the target firm.

3. We have used the term competitive similarity, as opposed to competitive dissimilarity, in H2 to keep the wording consistent across hypotheses. Alternatively, we could have stated this hypothesis such that competitive dissimilarity will be positively related to post-acquisition revenue growth at the target.

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Figure 1: The relationship between competitive similarity and savings in cost of goods sold at high and low levels of organizational similarity

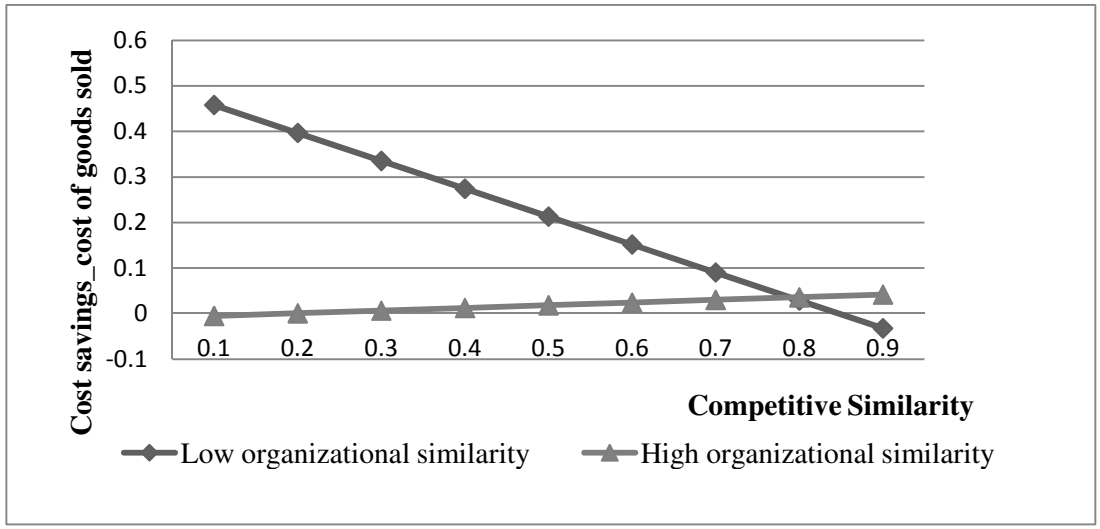

Figure 2: The relationship between competitive similarity and savings in overhead expenses at high and low levels of organizational similarity

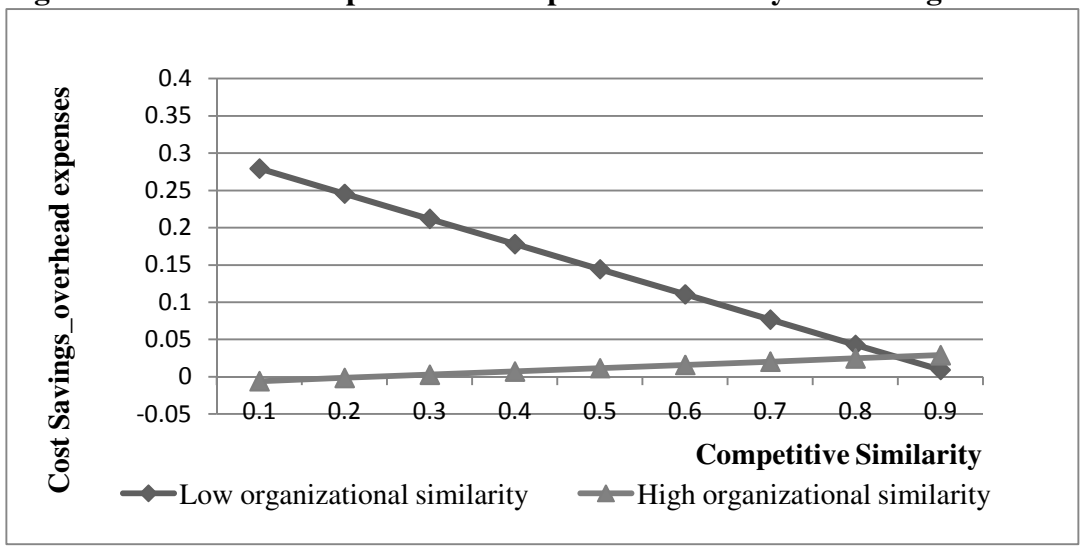

Figure 3: The relationship between competitive similarity and savings in marketing expenses at high and low levels of organizational similarity

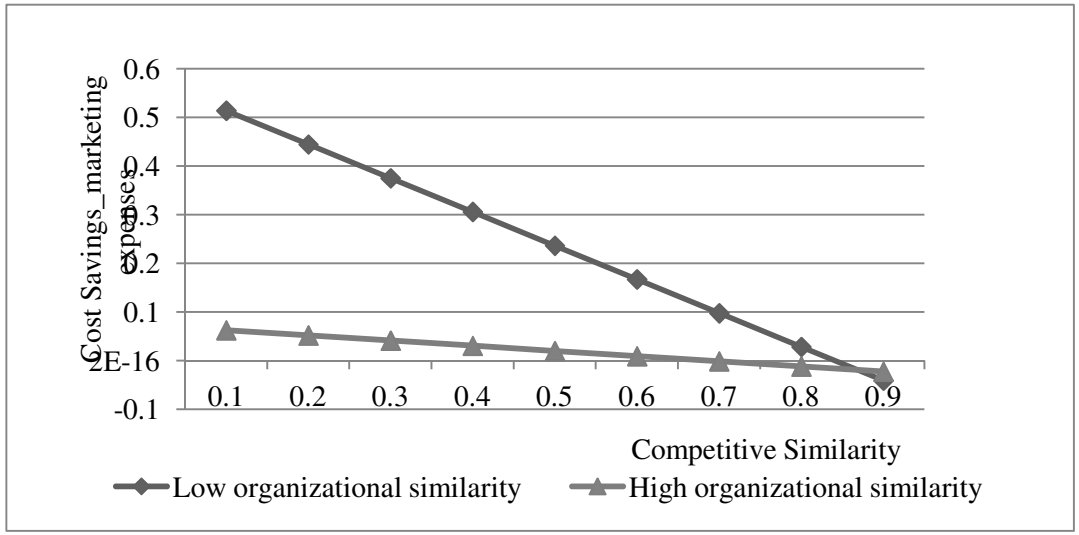

Table 1: Descriptive statistics and correlation matrix.

	1	2	3	4	5	6	7	8	9	10	11	12
1 Savings in cost of goods sold												
2 Savings in overhead expenses	0.222*											
3 Savings in marketing expenses	0.019	0.42*										
4 Revenue growth	0.153*	0.452*	0.084									
5 Profitability improvement	0.442*	0.475*	0.384*	0.131								
6 Competitive similarity	-0.182*	-0.097	-0.147	-0.121	-0.148							
7 organizational similarity	0.03	-0.232*	-0.159	-0.155	-0.013	0.019						
8 target relative size	0.039	-0.024	-0.039	-0.003	0.014	0.112	0.126					
9 target pre-acquisition ROA	-0.153*	-0.283*	-0.337*	-0.06	-0.408*	-0.017	0.158*	0.028				
10. acquirer pre-acquisitio	0.06	-0.033	-0.065	-0.014	-0.007	-0.307*	-0.127	0.014	0.009			

n ROA												
11 Acquirer's Acquisition experience	-0.095	0.172	0.079	0.133	-0.026	0.244	-0.271	-0.148	-0.05	-0.192*		
12 Foreign acquirer	-0.119	-0.047	-0.026	-0.109	-0.018	0.207	0.459	0.145	0.11	-0.292*	0.154*	
Mean	0.024	0.016	-0.011	0.985	0.001	0.802	0.786	1.764	-0.007	0.023	1.468	0.369
S.D.	0.119	0.1	0.132	3.897	0.123	0.092	0.119	16.141	0.107	0.054	1.5	0.484

* $p<0.05$; n=139.

Table 2: Strategic similarity and cost savings at the target.

	Panel 1 DV: Target cost savings – cost of goods sold			Panel 2 DV: Target cost savings – overhead expenses			Panel 3 DV: Target cost savings – marketing expenses		
	Model 1	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Competitive similarity		-0.226 (0.119)*	-0.277 (0.117)**		-0.118 (0.063)*	-0.147 (0.061)**		-0.356 (0.095)***	-0.400 (0.093)***
Organizational similarity		0.073 (0.106)	0.040 (0.103)		-0.040 (0.056)	-0.059 (0.054)		-0.105 (0.084)	-0.135 (0.082)
Competitive similarity * organizational similarity			2.468 (0.827)***			1.402 (0.419)***			2.159 (0.685)***
Relative size	-0.004 (0.026)	-0.001 (0.026)	0.001 (0.025)	0.022 (0.013)	0.018 (0.014)	0.020 (0.013)	0.037 (0.021)*	0.029 (0.021)	0.031 (0.020)
Target's pre-acquisition profitability	-0.173 (0.099)*	-0.144 (0.100)	-0.135 (0.097)	-0.212 (0.052)***	-0.189 (0.053)***	-0.184 (0.051)***	-0.442 (0.082)***	-0.374 (0.080)***	-0.366 (0.077)***
Acquirer's pre-acquisition profitability	0.075 (0.219)	0.030 (0.220)	0.108 (0.215)	0.109 (0.115)	0.065 (0.116)	0.109 (0.112)	0.001 (0.181)	-0.126 (0.175)	-0.058 (0.171)
Acquirer's acquisition experience	-0.012 (0.009)	-0.009 (0.010)	-0.010 (0.010)	0.015 (0.005)***	0.013 (0.005)**	0.013 (0.005)**	-0.008 (0.008)	-0.012 (0.008)	-0.012 (0.008)
Foreign acquirer	-0.022 (0.023)	-0.033 (0.025)	-0.032 (0.024)	0.008 (0.012)	0.010 (0.013)	0.011 (0.013)	-0.000 (0.019)	0.004 (0.020)	0.006 (0.019)
Constant	0.035 (0.054)	0.041 (0.056)	0.031 (0.054)	0.049 (0.028)*	0.039 (0.029)	0.033 (0.028)	0.043 (0.045)	0.015 (0.045)	0.006 (0.043)
Observations	139	139	139	139	139	139	139	139	139
R-squared	0.096	0.121	0.174	0.197	0.219	0.274	0.204	0.283	0.332

*** p<0.01; ** p<0.05; * p<0; standard errors in parentheses; year dummies included but not shown.

Table 3: Strategic similarity and revenue growth at the target.

	Model 1	Model 2	Model 3
Competitive similarity		-5.923 (2.460)**	-6.471 (2.473)***
Organizational similarity		-1.724 (2.177)	-2.082 (2.176)
Competitive similarity * organizational similarity			26.326 (18.889)
Relative size	-0.316 (0.533)	-0.462 (0.536)	-0.437 (0.532)
Pre-acquisition target profitability	-1.313 (2.062)	-0.192 (2.066)	-0.091 (2.051)
Acquirer's pre-acquisition profitability	-2.519 (4.547)	-4.630 (4.534)	-3.806 (4.539)
Acquirer's acquisition experience	0.074 (0.195)	0.004 (0.209)	-0.001 (0.208)
Foreign acquirer	-0.474 (0.483)	-0.407 (0.520)	-0.388 (0.516)
Constant	-0.234 (1.117)	-0.701 (1.155)	-0.810 (1.149)
Observations	139	139	139
R-squared	0.104	0.143	0.156

*** p<0.01; ** p<0.05; * p<0.1; standard errors in parentheses; year dummies included but not shown.

Table 4: Strategic similarity and profitability improvement at the target.

	Model 1	Model 2
Competitive similarity		-0.229 (0.130)*
Organizational similarity		0.014 (0.115)
Relative size	-0.020 (0.028)	-0.021 (0.028)
Pre-acquisition target profitability	-0.441 (0.108)***	-0.405 (0.109)***
Acquirer's pre-acquisition profitability	0.026 (0.238)	-0.035 (0.240)
Acquirer's acquisition experience	-0.005 (0.010)	-0.005 (0.011)
Foreign acquirer	0.019 (0.025)	0.013 (0.028)
Constant	-0.043 (0.058)	-0.048 (0.061)
Observations	139	139
R-squared	0.161	0.180

*** p<0.01; ** p<0.05; * p<0.1; standard errors in parentheses; year dummies included but not shown.

Appendix: Ownership types and codes of firms in China.

Code	Ownership of Registration
	Domestic enterprises
110	State-owned enterprises (SOEs) (Guoyou qiye)
120	Collectively-owned enterprises (COEs) (Qiti qiye)
130	Joint-stock cooperative enterprises (Gufen hezuo qiye)
140	Domestic joint ventures (Lianying qiye)
141	Joint ventures between SOEs(Guoyou lianying qiye)
142	Joint ventures between COEs (Jiti lianying qiye)
143	Joint ventures between SOEs and COEs (Guoyou and jiti lianying qiye)
149	Other domestic joint ventures (Qita lianying qiye)
150	Limited-liability enterprises (LLEs) (Youxian ziren gongsi)
151	State-owned LLEs (Guoyou duzi gongsi)
159	Other LLEs
160	Share-holding enterprises (SHEs) (Guofen youxian gongsi)
170	Privately-owned enterprises (POEs) (Siyou qiye)
171	Wholly privately-owned enterprises (Siyou duzi qiye)
172	Private cooperative enterprises(Siying hehuo qiye)
173	Privately-owned LLEs (Siying youxian zeren gongsi)
174	Privately-owned SHEs (Siying youxian zeren gongsi)
190	Other types of enterprises
	Enterprises with funds from Hong Kong, Macao, and Taiwan (HMTEs)
210	HMTEs in joint-venture format (Gang, Ao, Tai hezi jingying qiye)
220	HMTEs in cooperative format (Gang, Ao, Tai hezuo jingying qiye)
230	Wholly-owned HMTEs (Gang, Ao, Tai duzi jingying qiye)
240	Shareholding HMTEs (Gang, Ao, Tai touzi gufen youxian gongsi)
	Foreign invested enterprises (FIEs)
310	Sino-foreign joint ventures (Zhongwai hezi jingying qiye)
320	Sino-foreign cooperative enterprises (Zhongwai hezuo jingying qiye)
330	Wholly-owned FIEs (Waizi qiye)
340	Foreign-invested SHEs (Waishang touzi youxian gongsi)

Source: National Bureau of Statistics of China

Author profiles

Dr. Yuping Zeng is an Assistant Professor at the School of Business, Southern Illinois University Edwardsville. She received her Ph.D. in Strategic Management and International Business from Peking University, China, and did her post-doctoral research at the Ohio State University. Her research interests include mergers and acquisitions, foreign direct investment, and institutional transitions. She has published articles in the *Journal of International Business Studies*, *Journal of Management Studies*, *Management International Review*, and several other English and Chinese journals.

Dr. Tim Schoenecker is an Associate Professor at the School of Business, Southern Illinois University Edwardsville (SIUE). He earned his Ph.D. in Strategic Management from Purdue University. At SIUE, his primary teaching assignments are in the areas of strategy and entrepreneurship. His research interests are primarily in the areas of corporate governance and top management teams. He has published in various journals, such as *Strategic Management Journal*, *IEEE Transactions on Engineering Management*, *Organization Science*, and *Entrepreneurship: Theory and Practice*.