

Firms' Managerial Ability as a Driving Force for Engaging in Mergers and Acquisitions

Huijie Cui* and Sidney C M Leung**

This study examines the relationship between acquiring firms' managerial ability and their decisions on mergers and acquisitions (M&As). Using M&A data for a sample of US firms from 2000 to 2012, the authors hypothesize and find that when the acquiring firm's managerial ability is greater, the probability of engaging in M&As and the likelihood of committing serial M&As are both higher. The authors also find that firms with high managerial ability are more likely to enter into horizontal same-industry acquisitions. These results show that the acquiring firm's managerial ability is a major determinant of M&A activities, and that superior managers are more inclined to achieve growth through external acquisitions, particularly horizontal M&As.

JEL Codes: G34, M12 and O47

1. Introduction

In today's dynamic environment, mergers and acquisitions (hereafter M&As) are an important growth strategy for firms. Usually, firms pursue growth opportunities through either internal growth strategies or external takeovers. Relative to internal growth, an acquisition can shorten the time span of expansion and provide cash flows immediately. The neoclassical model for takeovers suggests that a primary function of M&As is to facilitate the reallocation of assets from less to more efficient uses (Mitchell and Mulherin, 1996; Maksimovic and Phillips, 2001 & 2002; Harford, 2005). Acquisitions represent an important tool for managing firm resource profiles and building valuable resource stocks (Capron and Mitchell, 1998; Capron and Pistre, 2002; Carow et al., 2004). Realizing growth through acquisitions has several benefits, including lower entry costs (Roberts and Berry, 1984), the circumvention of entry barriers (Singh and Montgomery, 1987), and faster access to and greater control over resources than internal development often affords (Capron, 1999; Lambe and Spekman, 1997; King et al., 2003). In summary, M&As are an effective and frequently used means of appropriating value from others' resources and realizing growth (Hitt et al., 2002). Despite the various possible benefits of growth through M&As, the empirical research on the effects of acquisitions on firm performance has generally failed to find consistent evidence of an increased wealth effect for the acquiring firms after acquisitions (Tuch and O'Sullivan, 2007; Agrawal and Jaffe, 2000). Acquisitions involve a complex integration process and could fail to achieve their intended benefits. Inadequate evaluation of the target firm, large debt after acquisitions, or a problematic integration and implementation strategy may lead to acquisition failure (Hitt et al., 2007; Vasilaki and O'Regan, 2008).

The ability of the top management team (interchangeable with managerial ability) as an important source of value creation for the firm—a central premise of the resource-based

* Dr. Huijie Cui, Department of Accounting and Financial Management, Beijing Foreign Studies University, P.R.China. Email : cuihuijie@bfsu.edu.cn

** Dr. Sidney C M Leung, City University of Hong Kong, Hong Kong
Email: acsleung@cityu.edu.hk

Cui & Leung

view of the firm—has long been recognized in management research as explaining the differences in organizational decisions and outcomes (Holcomb et al., 2009). Managerial ability refers to the knowledge, skills, and experience of managers, which are often tacit (Hitt et al., 2007). Able managers create greater value with fewer resources through effective combination and the use of firm resources. The post-acquisition success or failure of an M&A depends on whether the acquiring firm is able to manage the change process successfully and maximize the synergistic benefits of the M&A. A superior management team possesses better knowledge, skills, and experience and is thus expected to have greater confidence and be more capable of identifying suitable target firms, successfully managing changes during the acquisition process, and maximizing the synergistic benefits of acquisition. In this study, the authors empirically examine whether firms with higher managerial ability are more inclined to engage in M&As and whether they are more interested in target firms in horizontal or diversified industries.

The managerial ability of a management team is tacit and difficult to observe directly. Earlier studies on managerial ability have largely focused on indirect measures of managerial ability such as CEO characteristics, including CEO ownership, CEO compensation, CEO tenure, and CEO expertise or networks (Chikh and Filbien, 2011; Walters et al., 2007). Bertrand and Schoar (2003), however, argue that the CEO measures for managerial ability used in previous studies are indirect and noisy because the CEO characteristics neither comprehensively capture the effectiveness of management teams' managerial ability nor effectively distinguish between the effects of managerial ability and firm effects. Recently, the management science literature has drawn on a resource-based analysis of managerial ability to develop a manager-specific efficiency measure, a "data envelopment analysis" (DEA) approach to measure management quality. Demerjian et al. (2012) propose a measure of managerial ability based on managers' efficiency in generating revenue. This measure distinguishes between manager-generated efficiency and efficiency that can be attributed to firm-specific characteristics. These authors show that their manager-specific efficiency measure outperforms previous measures of managerial ability. In our study, the authors follow the approach used in Demerjian et al. (2012) for measuring managerial ability and conduct empirical tests to determine whether the managerial ability of acquiring firms affects their growth strategies through M&A.

Using a sample of U.S. M&A cases over the 2000–2012 period, the authors obtain the following findings. First, when acquiring firms' managerial ability is higher, they are more likely to engage in acquisition activities and conduct serial acquisitions. Second, more able managers are more likely to enter into horizontal same-industry acquisitions than diversified ones.

This study makes several contributions to the literature. First, it extends the research that examines the effects of the quality of management teams on firms' growth strategies. Our empirical evidence indicates that the extent of the managerial ability of acquiring firms plays an important role in determining firms' M&A activities. The literature suggests that the realization of growth through M&A is substantially influenced by the way in which acquirers manage and process the potentially strategic fit between firms (Dong et al., 2006; Bertrand and Schoar, 2003). Klasa and Stegemoller (2007) point out that there is little evidence on the extent to which firms use takeovers as an efficient way to invest in growth prospects. Bertrand and Schoar (2003) provide limited evidence on whether managerial ability influences corporate growth strategies, including engagement in acquisition activities. To our knowledge, this study is among the first effort to empirically document the direct relationship between the managerial ability of acquiring firms and M&A activities. Our

Cui & Leung

empirical evidence consistently shows that the managerial ability of acquiring firms plays a critical role in determining firms' strategies in M&A decisions.

Second, this study provides new insights into the relationship between diversified versus horizontal acquisition and acquiring firms' managerial ability. The different growth strategies and outcomes through diversified and horizontal acquisition have received a great deal of attention in M&A studies (Gaur et al., 2013; Moatti et al., 2015). Diversified acquisitions allow firms to shift their core product lines or markets into ones with higher growth prospects or diversify the risk on managers' human capital (Morck et al., 1990), while horizontal (same industry) acquisitions help firms increase their market power and reduce competition in the industry (Prager, 1992; Kim and Singal, 1993). Our findings support the view that more able managers with superior industry expertise prefer to use horizontal acquisitions to realize future growth by taking advantage of their overlapping knowledge and industry experience.

Finally, the authors use a more direct and comprehensive approach to measure the quality of management teams. Our manager-specific measure of managerial ability is based on a DEA measure of managerial ability that can better separate firm efficiency from management efficiency and is thus a superior measurement of managerial ability to CEO characteristics or historical performance, which were used in prior studies (Bertrand and Schoar, 2003; Demerjian et al., 2012).

The remainder of the study is organized as follows. Section 2 reviews the related literature and develops hypotheses. Section 3 presents the research methodology, including the research design and the sample selection. Findings and discussion are provided in section 4. The last section summarizes and concludes the paper.

2. Literature Review and Hypothesis Development

2.1 The Managerial Ability of Acquiring Firms and Engagement in M&As

Development and growth are critical to the success of firms, which can be achieved either by internal growth via internal development or external growth via mergers and acquisitions. M&As have several benefits over internal growth. First, firms with internal development may need several years or even longer to realize their final tasks and benefits, while acquisitions are a relatively quicker growth strategy (Capron, 1999; Lambe and Spekman, 1997; Roberts and Berry, 1984). Second, the incremental nature of the internal development process can be more expensive than the purchase of an ongoing business, especially when heading into high entry-barrier areas (Singh and Montgomery, 1987; Roberts and Berry, 1984). Third, acquisitions help facilitate the reallocation of assets from less to more efficient uses (Mitchell and Mulherin, 1996; Maksimovic and Phillips, 2001, 2002; Harford, 2005). Finally, acquisition helps firms obtain financial synergies by lowering the cost of capital, realizing strategic realignment, or adapting to a regulation environment change or technological change (DePamphili, 2012).

Even though M&A enables acquiring firms to realize strategic growth in a shorter time and at a lower cost, the potential benefits of M&As may not be realized unless the management team can identify suitable acquisition targets, understand the target value precisely, make the purchase decision in actuality, and actualize the potential synergies (Goodman et al., 2014). Otherwise, the top management of acquiring firms will bear the risks of acquisition failures, such as ex-post dismissal risk (Aktas et al., 2009). Able managers have superior

Cui & Leung

knowledge, skills, and experience and are thus more likely to accurately assess target firms' financial and non-financial information, understand their intrinsic value more precisely, minimize the potential disruptions of merging two entities, and realize the synergy of the M&A. Overall, superior managers are more likely to realize the benefits of acquisitions and lower their costs. Therefore, the authors expect the extent of engagement in M&A activities to increase with the acquiring firm's managerial ability. Our first hypothesis is as follows:

H1: All else being equal, when acquiring firms' managerial ability is higher, they are more likely to engage in mergers and acquisitions activities.

In the empirical tests, the authors examine whether managerial ability is positively associated with the probability of opting for M&As and serial acquisitions.

2.2 The Managerial Ability of Acquiring Firms and Horizontal versus Diversified Acquisitions

Diversified acquisitions involves buying target firms outside an acquiring company's current primary lines of business. Diversification may create financial synergy that reduces the cost of capital, or it may allow a firm to shift its core product lines or markets into ones with higher growth prospects. In contrast, horizontal acquisitions are M&As of target firms in the same industry that could promote the acquirer's core business. The benefits of horizontal acquisitions can include the scale of economies and increases in the efficiency of operations (Banerjee and Eckard, 1998), the redeployment and acquisition of resources (Capron et al., 1998; Puranam and Srikanth, 2007), and increased market power and reduced competition in an industry (Prager, 1992; Kim and Singal, 1993).

Managerial ability is conceptualized into three different types—firm-specific, industry-specific, and general knowledge—according to the degree of transferability and relevance of ability to different firms and industry contexts (Becker, 1964; Castanias and Helfat, 1991). Industry-specific ability is somewhat less transferable than general knowledge. When acquiring a target firm in the same industry, managers have no need to learn industry-specific knowledge and thus save cost and efforts compared with inter-industry acquisitions. Because of overlapping functions and product lines, horizontal acquisitions are more likely to realize cost savings than diversified acquisitions (Harding and Rovit, 2004; Megginson et al., 2003; Singh and Montgomery, 1987). High-managerial-ability firms have stronger industry knowledge and expertise; therefore, they have a clearer idea of the economic performance, key risks, and economic drivers of their industries. Superior managers can easily recognize and reduce these inefficiencies in the acquired firms if they are in the same industry because of their experience and expertise in managing similar lines of business (Capron, 1999). As a result, acquiring firms that have superior managers are more capable of achieving value-maximization from increased input-output efficiency in horizontal acquisitions. Thus, the authors hypothesize that managers with higher ability prefer intra-industry firms as acquisition targets. On the basis of this argument, our second hypothesis is as follows:

H2: All else being equal, acquiring firms with higher managerial ability are more likely to engage in horizontal acquisitions.

3. Research Methodology

3.1 Data and Sample

The authors initially extracted all of the deal information data from the SDC Platinum Mergers & Acquisitions Database and included all deals settled from 2000 to 2012. The authors included all public acquiring firms because financial data were needed to construct the control variables. Our managerial ability data came from Demerjian's website. The authors collected R&D information and annual financial control variables from Compustat. Some observations were excluded when financial data or data for constructing main variable data were missing. Financial firms were excluded because their mergers and acquisitions are subject to more stringent regulations and restrictions. After these eliminations, the final sample to test the probability of opting for acquisition contained 14,548 observations, and the final sample to analyze serial acquisition analysis contained 6,818 observations. Analysis of the probability of engaging in horizontal acquisitions versus diversified acquisitions provided 8,369 firm-year observations. All of the continuous variables were winsorized at the top and bottom one percentile.

3.2 Measure of Managerial Ability

Quantifying a good measure of managerial ability is difficult. A number of studies focus on broader but potentially less precise measures of managerial ability such as past abnormal performance and CEO or CFO characteristics, such as compensation, tenure, media coverage, or education (Fee and Hadlock, 2003; Rajgopal et al., 2006; Milbourn, 2003; Tervio, 2008). These broader proxies have some problems, as mentioned by Bertrand and Schoar (2003) and Demerjian et al. (2012). These ability measures contain noise and are difficult to attribute solely to top management's ability. Top management team members such as COOs, subdivision leaders, and other members besides CEOs and CFOs also play important and significant roles in corporate decisions. Demerjian et al. (2012) introduce a new DEA measure of managerial ability based on managers' efficiency relative to their industry peers in transforming corporate resources into revenue. Their work compares prior managerial ability measures with their new measure and finds that the DEA measure dominates and outperforms the alternative measures such as historical industry-adjusted stock returns, historical industry-adjusted ROA, CEO compensation and CEO Tenure. This new measure partitions time and industry effects and firm-specific effects from manager-specific effects more precisely than prior measures.

Thus, our main measure of managerial ability of acquiring firms borrows from Demerjian et al. (2012). This measure generates an estimate of how efficiently managers use their firms' resources to generate rents by using DEA estimation. By choosing several main financial items as inputs and sales as output, they estimate the DEA efficiency by industry (based on Fama and French, 1997). Higher quality managers are more likely to use fewer resources to generate more outputs. This efficiency measure compares the sales generated by each firm conditional on the following financial and non-financial inputs used by the firm: cost of goods sold, selling and administrative expenses, net PP&E, net operating leases, net intangible assets, and other inputs that are not reported separately in the financial statements, such as labor and consulting services. The DEA optimization procedure is applied to each firm to obtain a total efficiency score. Observations with value 1 are the most efficient. Firms with a score of less than 1 need to reduce costs or increase revenue to achieve efficiency. The total efficiency score is then divided into a firm-level efficiency measure and a manager-specific efficiency measure by further parsing out total firm

Cui & Leung

efficiency into firm efficiency by regressing a Tobit model on six firm characteristics that affect firm efficiency: firm size, firm market share, cash availability, life cycle, operational complexity, and foreign operations. The residual efficiency score (denoted by MA_SCORE) from the above estimation is the manager-specific ability measure. The ranking value of the manager-specific efficiency score is denoted by MA_SCORE_RANK. For detailed DEA procedures, please see Demerjian et al. (2012).

3.3 Regression Model

To test whether the managerial ability of acquiring firms affects acquisition engagements (H1), the authors look at both the probability of opting for acquisitions and the probability of engaging in serial acquisitions. To test firms' probability of opting for acquisition, the authors follow the acquisition prediction model based on the concept of Palepu (1986) and McNichols and Stubben (2015), which estimates a combined sample of acquiring firms and control firms matched based on their two-digit SIC code, fiscal year, size, and age. A matching sample is used because the number of acquisition observations is very small compared to the number of non-acquisition observations in the population. This kind of sample is not a pure random sample. The authors control for company characteristics previously found to be associated with acquisitions, including size, leverage, market-to-book ratio, liquidity, return on asset, sales growth, and Tobin's q (Lang et al., 1989; Morck et al., 1990; Moeller et al., 2004; Harford, 2005; Dong et al., 2006; Levi et al., 2010; Huang et al., 2014). Size is measured by the natural logarithm of total assets, leverage as the ratio of total liabilities to total assets (LEVERAGE), the market-to-book ratio as the ratio of the market value to the book value of equity (MB), liquidity as cash and short-term investments divided by total assets (LIQUIDITY), firm age (AGE), return on asset as net income from total equity (ROA), Tobin's q (Q), and acquiring firms' sales growth (GROWTH). For each observation, these variables are measured at the end of the fiscal year prior to acquisition. The authors also include industry fixed effects using Fama–French 48 industry classification and cluster firm and year standard errors. Accordingly, the authors estimate the following regression and expect $\beta_1 > 0$ to support H1:

$$\begin{aligned} \text{Logit}(ACQ = 0/1) &= \alpha + \beta_1 MA_SCORE/MA_SCORE_RANK + \beta_2 SIZE + \beta_3 LEVERAGE + \beta_4 MB \\ &+ \beta_5 LIQUIDITY + \beta_6 AGE + \beta_7 ROA + \beta_8 Q + \beta_9 GROWTH + \varepsilon \quad (1) \end{aligned}$$

To test for the effect of acquiring firms' managerial ability on serial acquisition activities (H1), A dummy variable (SERIAL) is constructed following Fuller et al. (2002). SERIAL is defined as '1' if an acquirer issues bids for five or more targets in any five-year window during the sample period and '0' otherwise. In the construction of the sample, clustered takeovers, in which the bidder acquires two or more target firms within five days, are excluded in order to rule out the possibility of acquisition package issues. The percentage of shares acquired should be more than 50%. The authors control for firm characteristics and such deal characteristics as firm size (SIZE), diversified acquisition (DIVERSIFY), payment by stock (STOCK), payment by cash (CASH), leverage (LEVERAGE), free cash flow effects (FCF), market-to-book ratio (MB), Tobin's q (Q), sales growth (GROWTH), PE ratio (EP), return on equity (ROE), and liquidity (LIQUIDITY), which may influence the serial acquisition decisions. Hypothesis 1 translates as $\beta_1 > 0$, and the model is as follows:

$$\begin{aligned} \text{Logit}(SERIAL = 0/1) &= \alpha + \beta_1 MA_SCORE/MA_SCORE_RANK + \beta_2 SIZE + \beta_3 DIVERSIFY + \beta_4 STOCK \\ &+ \beta_5 CASH + \beta_6 LEVERAGE + \beta_7 FCF + \beta_8 MB + \beta_9 Q + \beta_{10} GROWTH + \beta_{11} EP \\ &+ \beta_{12} ROE + \beta_{13} LIQUIDITY + \varepsilon \quad (2) \end{aligned}$$

Cui & Leung

To define horizontal acquisition, the authors use the four-digit SIC code as the same-industry definition. According to Raman et al. (2013) and Castanias and Helfat (1991), learning industry-specific and firm-specific knowledge is harder than learning general knowledge. Industry-specific managerial knowledge is also expected to be more difficult to learn. The authors control for important firm characteristics and deal characteristics in the logistic regression:

$$\begin{aligned}
 & \text{Logit}(\text{HORIZONTAL_ACQUISITION} = 0/1) \\
 & = \alpha + \beta_1 \text{MA_SCORE/MA_SCORE_RANK} + \beta_2 \text{SIZE} + \beta_3 \text{LEVERAGE} + \beta_4 \text{FCF} + \beta_5 \text{MB} \\
 & + \beta_6 \text{Q} + \beta_7 \text{GROWTH} + \beta_8 \text{EP} + \beta_9 \text{ROE} + \beta_{10} \text{LIQUIDITY} + \beta_{11} \text{STOCK} \\
 & + \beta_{12} \text{DEAL_VALUE} + \varepsilon \quad (3)
 \end{aligned}$$

4. The Findings

4.1 Descriptive Statistics

Table 1 reports the summary statistics of different acquisition behavior control variables based on different basic regression models. The mean (median) value of managerial ability, MA_SCORE and MA_SCORE_RANK, is -0.009 (-0.022) and 0.546 (0.500). Of the sample, 44.4% of firms conduct serial acquisitions during five-year intervals, indicating that serial acquisitions are not a rare situation (SERIAL), while 51.6% engage in horizontal acquisition rather than diversified acquisition.

Table 1: Descriptive statistics for all variables

VARIABLE	MEAN	MIN	P25	P50	P75	MAX	SD
MA_SCORE	-0.009	-0.365	-0.115	-0.022	0.082	0.438	0.158
MA_SCORE_RANK	0.546	0.100	0.300	0.500	0.800	1.000	0.285
ACQ	0.505	0.000	0.000	1.000	1.000	1.000	0.500
SERIAL	0.444	0.000	0.000	0.000	1.000	1.000	0.497
HORIZONTAL_							
ACQUISITION	0.516	0.000	0.000	1.000	1.000	1.000	0.500
SIZE	5.771	2.262	4.611	5.670	6.847	11.050	1.655
LEVERAGE	0.354	0.043	0.189	0.327	0.491	0.995	0.201
MB	3.821	0.000	1.355	2.327	4.074	37.190	5.125
LIQUIDITY	0.427	0.031	0.228	0.406	0.610	0.933	0.240
AGE	7.988	6.031	7.532	8.118	8.565	9.255	0.758
GROWTH	0.187	-0.100	-0.018	0.086	0.240	6.142	0.701
Q	0.154	0.000	0.000	0.070	0.268	0.917	0.186
FCF	0.020	-0.579	-0.002	0.046	0.086	0.245	0.131
EP	0.004	-0.933	0.004	0.040	0.064	0.202	0.157
ROE	0.029	-1.013	0.004	0.051	0.091	0.781	0.187
DIVERSIFY	0.546	0.000	0.000	1.000	1.000	1.000	0.498
STOCK	0.059	0.000	0.000	0.000	0.000	1.000	0.235
CASH	0.370	0.000	0.000	0.000	1.000	1.000	0.483
DEAL_VALUE	292.400	0.500	10.500	40.000	170.000	7591.000	898.900

Table 2 shows the Pearson correlation of managerial ability and different types of M&A behavior. The probability of engaging in acquisitions (ACQ) and serial acquisitions (SERIAL) are both positively and significantly related to managerial ability

Cui & Leung

(MA_SCORE/MA_SCORE_RANK), which is consistent with our first hypothesis. The relationship between the managerial ability of acquiring firms (MA_SCORE/MA_SCORE_RANK) and HORIZONTAL_ACQUISITION is positive and significant, indicating that acquiring firms with high managerial ability prefer to engage in horizontal acquisition. In general, the correlation table provides some support for our main hypotheses.

4.2 Multivariate Regression Results

In this section, the authors first examine the effect of acquiring firms' managerial ability on engagements in acquisition activities. Hypothesis 1 predicts that firms with more superior management team have greater confidence in minimizing the obstacles of acquisition process and maximising the synergy benefits of mergers and acquisitions. Therefore, firms with higher managerial ability are more likely to engage in M&A activities. Our results as shown in Panel A, Table 3. Column 1 shows a positive and significant coefficient of MA_SCORE (0.587, $t = 3.624$), thus indicating a significant positive relation between acquiring firms' managerial ability and the propensity of engaging M&A activities. When using the ranking value of managerial ability, MA_SCORE_RANK, the coefficient on the managerial ability (0.398, $t = 4.572$) remains positive and highly statistically significant.

Table 4 summarizes the results of acquiring firms' managerial ability in regard to serial acquisition decisions. The coefficients of MA_SCORE and MA_SCORE_RANK are both positive and significant (0.568, $t = 1.920$; 0.272, $t = 1.682$), indicating that more able managers have a greater tendency to pursue serial acquisitions. The control variables SIZE and MB are positively related to acquisition probability, while LEVERAGE is negatively related to acquisition probability; these findings are consistent with Kravet et al. (2012).

In summary, the results in Tables 3 and 4 showing a positive relation between managerial ability and the propensity of engaging in M&A activities provide strong support for Hypothesis 1.

The authors next test whether, among the firms engaging in M&A activities, acquiring firms with higher managerial ability are more inclined to select acquisition targets from the same industry (horizontal acquisitions) than from different industries (diversified acquisitions). This analysis is important to understand whether it is the industry-specific or general generic knowledge of management skills, expertise and experience that contribute to the core value of managerial ability. If the industry-specific managerial ability matters more, a positive association between managerial ability and horizontal acquisitions is predicted. On the contrary, a negative association infers that the general generic knowledge is the most important part of managerial ability. To test the second hypothesis, the authors run Equation 3 and report the results in Table 5. Results in Column 1 in Table 4 show that the coefficient of MA_SCORE is positive and significant at the 0.01 level (0.411, $t = 2.066$). When the ranking value of managerial ability is used, a consistent result is obtained although the result is slightly weaker. Overall, the empirical results support H2 and indicate that firms with higher managerial ability are more interested in selecting the target firms of acquisition from the same industry.

In sum, the empirical findings provide strong evidence that firms' managerial ability plays a critical role and is a driving force in the engagement of mergers and acquisitions.

4.3 Additional Tests

The authors perform sensitivity checks by varying the classification of serial acquisition and horizontal acquisition. Acquisition frequency is used as the measure of the dependent variable, instead of the dummy variable, SERIAL, to test Hypothesis 1 in the robustness tests. The authors also vary HORIZONTAL_ACQUISITION according to the different definitions of the same industry. The results are robust to the sensitivity tests.

Cui & Leung

Table 2: Correlation table

	MA_SCORE	MA_SCORE_RANK	SERIAL	HORIZONTAL_ACQUISITION	AGE	SIZE	DIVERSIFY	STOCK	CASH	LEVERAGE	FCF	MB	Q	GROWTH	EP	ROE	LIQUIDITY	DEAL_VALUE
MA_SCORE	1.000																	
MA_SCORE_RANK	0.914***	1.000																
SERIAL	0.042***	0.036***	1.000															
HORIZONTAL_ACQUISITION	0.050***	0.043***	-0.054***	1.000														
AGE	0.066***	0.043***	0.215***	0.039***	1.000													
SIZE	0.093***	0.068***	0.391***	0.027***	0.257***	1.000												
DIVERSIFY	-0.016*	-0.001	0.053***	-1.000***	-0.040***	-0.029***	1.000											
STOCK	-0.067***	-0.053***	-0.070***	-0.041***	-0.126***	-0.146***	0.042***	1.000										
CASH	0.045***	0.035***	-0.060***	0.207***	0.107***	0.091***	-0.208***	-0.176***	1.000									
LEVERAGE	0.040***	0.037***	0.095***	0.012	0.087***	0.211***	-0.012	-0.033***	-0.061***	1.000								
FCF	0.317***	0.294***	0.175***	0.019**	0.275***	0.341***	-0.019**	-0.214***	0.149***	-0.008	1.000							
MB	0.053***	0.063***	-0.054***	-0.013	-0.177***	-0.047***	0.013	0.117***	-0.027***	0.033***	-0.056***	1.000						
Q	-0.026***	-0.026***	0.131***	0.031***	0.048***	0.257***	-0.031***	-0.047***	-0.063***	0.827***	-0.021**	-0.040***	1.000					
GROWTH	0.161***	0.142***	-0.054***	-0.014	-0.206***	0.003	0.014	-0.007	-0.022**	0.064***	0.070***	0.045***	0.030***	1.000				
EP	0.234***	0.213***	0.089***	0.008	0.142***	0.226***	-0.008	-0.139***	0.101***	-0.045***	0.517***	0.039***	-0.024***	0.059***	1.000			
ROE	0.210***	0.193***	0.086***	0.027***	0.131***	0.235***	-0.028***	-0.139***	0.096***	0.001	0.501***	-0.033***	0.001	0.033***	0.490***	1.000		
LIQUIDITY	0.026***	0.041***	-0.241***	-0.033***	-0.200***	-0.408***	0.034***	0.142***	0.009	-0.340***	-0.143***	0.185***	-0.513***	-0.013	-0.119***	-0.106***	1.000	
DEAL_VALUE	0.045***	0.034***	0.099***	0.067***	0.076***	0.415***	-0.076***	0.007	-0.008	0.080***	0.078***	0.032***	0.095***	0.000	0.067***	0.074***	-0.156***	1.000

This table presents the correlation matrix of variables for the M&A sample. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Cui & Leung

Table 3: Managerial ability of acquiring firms and the probability of engaging in acquisition activities

VARIABLES	ACQ	ACQ
MA_SCORE	0.318* (1.838)	
MA_SCORE_RANK		0.268*** (2.892)
SIZE	0.254*** (10.884)	0.253*** (10.849)
LEVERAGE	-1.213*** (-5.311)	-1.240*** (-5.443)
MB	0.022*** (4.729)	0.022*** (4.660)
LIQUIDITY	-0.025 (-0.176)	-0.040 (-0.280)
AGE	0.132*** (3.376)	0.132*** (3.357)
ROE	0.480*** (4.250)	0.444*** (3.957)
GROWTH	0.102*** (3.691)	0.098*** (3.559)
Q	0.169 (0.634)	0.198 (0.743)
CONSTANT	-2.214*** (-3.931)	-2.374*** (-4.164)
OBSERVATIONS	14,548	14,548
R2	0.041	0.041

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Cui & Leung

Table 4: Managerial ability of acquiring firms and the probability of engaging in serial acquisitions

VARIABLES	SERIAL	SERIAL
MA_SCORE	0.568* (1.920)	
MA_SCORE_RANK		0.272* (1.682)
AGE	0.621*** (9.730)	0.620*** (9.729)
SIZE	0.503*** (14.513)	0.505*** (14.526)
DIVERSIFY	0.140** (1.960)	0.139* (1.953)
STOCK	-0.254* (-1.864)	-0.256* (-1.873)
CASH	-0.427*** (-5.878)	-0.429*** (-5.905)
LEVERAGE	-1.160*** (-2.733)	-1.147*** (-2.702)
FCF	1.521*** (3.856)	1.552*** (3.945)
MB	-0.018** (-2.020)	-0.018** (-2.007)
Q	1.565*** (3.137)	1.550*** (3.106)
GROWTH	-0.064* (-1.667)	-0.062 (-1.604)
EP	-0.224 (-1.122)	-0.222 (-1.106)
ROE	-0.516** (-1.981)	-0.517** (-1.985)
LIQUIDITY	-2.013*** (-8.051)	-2.016*** (-8.060)
CONSTANT	-7.705*** (-10.165)	-7.913*** (-10.346)
OBSERVATIONS	6,818	6,818
R2	0.224	0.224

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Managerial ability of acquiring firms and horizontal acquisition

VARIABLES	HORIZONTAL_ ACQUISITION	HORIZONTAL_ ACQUISITION
MA_SCORE	0.411** (2.066)	
MA_SCORE_RANK		0.144 (1.344)
SIZE	-0.011 (-0.544)	-0.010 (-0.499)
LEVERAGE	0.184 (0.650)	0.212 (0.753)
FCF	0.923*** (3.207)	0.966*** (3.357)
MB	-0.005 (-0.785)	-0.004 (-0.756)
Q	-0.518 (-1.591)	-0.545* (-1.678)
GROWTH	-0.141*** (-3.993)	-0.136*** (-3.882)
EP	-0.127 (-0.611)	-0.119 (-0.573)
ROE	0.148 (0.788)	0.153 (0.810)
LIQUIDITY	0.283* (1.666)	0.293* (1.722)
STOCK	-0.706*** (-6.304)	-0.706*** (-6.305)
DEAL_VALUE	0.000*** (4.565)	0.000*** (4.579)
CONSTANT	0.440 (0.949)	0.312 (0.673)
OBSERVATIONS	8,369	8,369
R2	0.131	0.131

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

5. Summary and Conclusions

This study examines whether and how the managerial ability of acquiring firms affects M&A activities. Firms frequently seek rapid growth on the implicit premise that increased size will lead to enhanced profitability (Moatti et al., 2015). Internal growth and external acquisition activities are two commonly used strategies to achieve firm growth. Compared with internal growth strategies, M&As are often a faster way to expand. Motivated by the suggestion in previous studies that the capability of firms' top management teams plays a critical role in achieving complementary resources and beneficial synergies, the authors hypothesize that acquiring firms with superior managerial ability are more confident in realizing growth through M&A activities and prefer horizontal targets. The authors quantify managerial ability based on the resource view of firms—that is, the managers' efficiency in transforming resources into revenue as compared to the performance of their industry peers—and follow Demerjian et al. (2012) in identifying a manager-specific efficiency component as the proxy of managerial ability. Our empirical results show that more able managers are more likely to

Cui & Leung

engage in acquisitions and serial acquisitions and that they prefer horizontal acquisitions. The results provide support for the argument that more able managers have the necessary experience and expertise to make superior judgments in the selection of suitable targets and in lowering acquisition risks.

To our knowledge, this study is the first to analyze the role of acquiring firms' managerial ability on firms' growth strategies through M&A. Previous studies have documented evidence that firms' individual managers have a puzzling role in M&A motivation. Earlier empirical evidence attributes the main motivation for acquisition to managers' overconfidence, while other studies view M&A as firms' optimal organizational growth strategy. Our study systematically demonstrates the effect of managerial ability on engagement in M&A activities. The findings also enable us to better understand the underlying motivation for acquisitions.

Managerial ability refers to the knowledge, skills, and experience of management team members. Superior managers facilitate the reallocation of assets from less to more efficient uses through M&As. By acquiring another business, more able managers can better utilize the combined resources and realize as much complementary benefits as possible. In the case of horizontal acquisition, firms may identify value creation opportunities that they could obtain through scale of economies and efficiency of operations to increase their market power. In contrast, diversification helps firms exploit untapped values in other industries. Our findings show that superior managers are more likely to engage in horizontal acquisitions by taking advantage of their expert knowledge.

In this study, the authors demonstrate that managerial ability is an important driving factor in engaging in M&A activities. This study is subject to two limitations. First, the use of Demerjian et al' measure of managerial ability has caveats including possible measurement errors in the inputs and output to firm efficiency and limited variables used in the second-stage estimation of firm-specific efficiency measure. Second, it is not clear why Demerjian et al did not use profits rather than revenue in measuring managerial ability. The authors suggest two main avenues for future research. First, future research can explore other potential driving factors that may explain firms' strategic growth variations. Second, researchers can further explore internal growth and acquisition activities together and analyze the effects of managerial ability on firms' growth strategies.

References

- Agrawal, A and Jaffe, JF 2000, 'The post merger performance puzzle', *Advances in Mergers and Acquisitions*, Vol. 1, pp.7–41.
- Aktas, N, de Bodt, E and Roll, R 2009, 'Learning, hubris and corporate serial acquisitions', *Journal of Corporate Finance*, Vol. 15, No. 5, pp.543–561.
- Banerjee, A and Eckard, E 1998, 'Are mega-mergers anticompetitive? Evidence from the first great merger wave', *The Rand Journal of Economics*, Vol. 29, No.4, pp.803–827.
- Becker, GS 1964. *Human capital: a theoretical and empirical analysis, with special reference to education*, Columbia University Press, New York.
- Bertrand, M and Schoar, A 2003, 'Managing with style: the effect of managers on firm policies', *The Quarterly Journal of Economics*, Vol. 118, No. 4, pp.1169–1208.
- Capron, L 1999, 'The long-term performance of horizontal acquisitions', *Strategic Management Journal*, Vol. 20, No. 11, pp.987–1018.

Cui & Leung

- Capron, L and Mitchell, W 1998, 'Bilateral resource redeployment and capabilities improvement following horizontal acquisitions', *Industrial and Corporate Change*, Vol. 7, No. 3, pp.453–484.
- Capron, L and Pistre, N 2002, 'When do acquirers earn abnormal returns?' *Strategic Management Journal*, Vol. 23, No. 9, pp.781–794.
- Carow, K, Heron, R and Saxton, T 2004, 'Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions', *Strategic Management Journal*, Vol. 25, No. 6, pp.563–585.
- Castanias, RP and Helfat, CE 1991, 'Managerial resource and rents', *Journal of Management*, Vol. 17, No. 1, pp.155–171.
- Chikh, S and Filbien, JY 2011, 'Acquisitions and CEO power: evidence from French networks', *Journal of Corporate Finance*, Vol. 17, No. 5, pp.1221–1236.
- Demerjian, P, Lev, B and McVay, S 2012, 'Quantifying managerial ability: a new measure and validity tests', *Management Science*, Vol. 58, No. 7, pp.1229–1248.
- DePamphilis, D 2012, *Mergers, acquisitions, and other restructuring activities*, Academic Press.
- Dong, M, Hirshleifer, D, Richardson, S and Toeh, SH 2006, 'Does investor misvaluation drive the takeover market?' *Journal of Finance*, Vol. 61, No. 2, pp.725–762.
- Fama, EF and French, KR 1997, 'Industry costs of equity', *Journal of Financial Economics*, Vol. 43, No. 2, pp.153–193.
- Fee, CE and Hadlock, CJ 2003, 'Raids, rewards, and reputations in the market for managerial talent', *Review of Financial Studies*, Vol. 16, No. 4, pp.1315–1357.
- Fuller, K, Netter, J and Stegemoller, M 2002, 'What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions', *Journal of Finance*, Vol. 57, No. 4, pp.1763–1793.
- Gaur, AS, Malhotra, S and Zhu, P 2013, 'Acquisition announcements and stock market valuations of acquiring firms' rivals: A test of the growth probability hypothesis in China', *Strategic Management Journal*, Vol. 34, pp.215–232.
- Goodman, TH, Neamtiu, M, Shroff, N and White, HD 2014, 'Management forecast quality and capital investment decisions', *Accounting Review*, Vol. 89, No. 1, pp.331–365.
- Harding, D and Rovit, S 2004, 'Building deals on bedrock', *Harvard Business Review*, Vol. 82, No. 9, pp.121-128.
- Harford, J 2005, 'What drives merger waves?' *Journal of Financial Economics*, Vol. 77, No. 3, pp.529–560.
- Hitt, MA, Harrison, JS and Ireland, RD 2001, *Mergers and acquisitions: Creating value for stakeholders*, Oxford University Press.
- Hitt, MA, Ireland, RD and Hoskisson, R 2007, *Strategic management cases: Competitiveness and globalization*, Thomson South-Western.
- Holcomb, TR, Holmes, RM and Connelly, BL 2009, 'Making the most of what you have: Managerial ability as a source of resource value creation', *Strategic Management Journal*, Vol. 30, No. 5, pp.457–485.
- Huang, Q, Jiang, F, Lie, E and Yang, K 2014, 'The role of investment banker directors in M&A', *Journal of Financial Economics*, Vol. 112, No. 2, pp.269–286.
- Kim, EH and Singal, V 1993, 'Mergers and market power: evidence from the airline industry', *American Economic Review*, Vol. 83, No. 3, pp.549–569.
- King, DR, Covin, JG and Hegarty, WH 2003, 'Complementary resources and the exploitation of technological innovations', *Journal of Management*, Vol. 29, No. 4, pp.589–606.
- Klasa, S and Stegemoller, M 2007, 'Takeover activity as a response to time-varying changes in investment opportunity sets: evidence from takeover sequences', *Financial Management*, Vol. 36, No. 2, pp.1–25.

Cui & Leung

- Kravet, TD, Myers, LA, Sanchez, JM and Scholz, S 2015. 'Do financial statement misstatements facilitate corporate acquisitions?' Working Paper.
- Lambe, CJ and Spekman, RE 1997, 'Alliances, external technology acquisition, and discontinuous technological change', *Journal of Product Innovation Management*, Vol. 14, No. 2, pp.102–116.
- Lang, LHP, Stulz, R and Walkling, RA 1989, 'Managerial performance, Tobin's Q, and the gains from successful tender offers', *Journal of Financial Economics*, Vol. 24, No. 1, pp.137–154.
- Levi, M, Li, K and Zhang, F 2010, 'Deal or no deal: hormones and the mergers and acquisitions game', *Management Science*, Vol. 56, No. 9, pp.1462–1483.
- Maksimovic, V and Phillips, G 2002, 'Do conglomerate firms allocate resources inefficiently across industries? Theory and evidence', *Journal of Finance*, Vol. 57, No. 2, pp.721–767.
- Maksimovic, V and Phillips, G 2001, 'The market for corporate assets: Who engages in mergers and asset sales and are there efficiency gains?' *Journal of Finance*, Vol. 56, No. 6, pp.2019–2065.
- McNichols, MF and Stubben, SR 2015, 'The effect of target-firm accounting quality on valuation in acquisitions', *Review of Accounting Studies*, Vol. 20, No. 1, pp.110–140.
- Meggison, WL, Morgan, A and Nail, L 2004, 'The determinants of positive long-term performance in strategic mergers: Corporate focus and cash', *Journal of Banking and Finance*, Vol. 28, No. 3, pp.523–552.
- Milbourn, TT 2003, 'CEO reputation and stock-based compensation', *Journal of Financial Economics*, Vol. 68, No. 2, pp.233–262.
- Mitchell, ML and Mulherin, JH 1996, 'The impact of industry shocks on takeover and restructuring activity', *Journal of Financial Economics*, Vol. 41, No. 2, pp.193–229.
- Moatti, V, Ren, CR, Anand, J and Dussauge, P 2015, 'Disentangling the performance effects of efficiency and bargaining power', *Strategic Management Journal*, Vol. 36, pp.745–757.
- Moeller, S.B., Schlingemann, F.P. and Stulz, R.M., 2004. 'Firm size and the gains from acquisitions', *Journal of Financial Economics*, Vol. 73, No. 2, pp.201–228.
- Montgomery, C and Singh, H 1987, 'Corporate acquisition strategies and economic performance', *Strategic Management Journal*, Vol. 8, No. 4, pp.377–386.
- Morck, R, Shleifer, A and Vishny, RW, 1990, 'Do managerial objective drive bad acquisitions?' *The Journal of Finance*, Vol. 45, No. 1, pp.31–48.
- Palepu, KG 1986, 'Predicting takeover targets. A methodological and empirical analysis', *Journal of Accounting and Economics*, Vol. 8, No. 1, pp.3–35.
- Prager, RA 1992, 'The effects of horizontal mergers on competition: the case of the northern securities company', *The RAND Journal of Economics*, Vol. 23, No. 1, pp.123–133.
- Puranam, P and Srikanth, K 2007, 'What they know vs. what they do: How acquirers leverage technology acquisitions', *Strategic Management Journal*, Vol. 28, No. 8, pp.805–825.
- Rajgopal, S, Shevlin, T and Zamora, V 2006, 'CEOs' outside employment opportunities and the lack of relative performance evaluation in compensation contracts', *Journal of Finance*, Vol. 61, No. 4, pp.1813–1844.
- Raman, K, Shivakumar, L and Tamayo, A 2013, 'Target's earnings quality and bidders' takeover decisions', *Review of Accounting Studies*, Vol. 18, No. 4, pp.1050–1087.
- Roberts, EB and Berry, CA 1985, 'Entering new businesses: selecting strategies for success', *Sloan Management Review*, Vol. 26, pp.3–17.
- Roberts, EB and Berry, C 1984, 'Entering new business: selecting strategies for success', *MIT Sloan Management Review*, Vol. 26, pp.1–34.

Cui & Leung

- Stern, I 2002, 'Mergers and acquisitions: a guide to creating value for stakeholders', *The Academy of Management Executive*, Vol. 16, No. 2, pp.171–173.
- Terviö, M 2008, 'The difference that CEOs make: An assignment model approach', *American Economic Review*, Vol. 98, No. 3, pp.642–668.
- Tuch, C and O'Sullivan, N 2007, 'The impact of acquisitions on firm performance: A review of the evidence', *International Journal of Management Reviews*, Vol. 9, No. 2, pp.141–170.
- Vasilaki, A and O' Regan, N 2008, 'Enhancing post - acquisition organisational performance: the role of the top management team', *Team Performance Management: An International Journal*, Vol. 14, pp.134 - 145.
- Walters, BA, Kroll, MJ and Wright, P 2007, 'CEO tenure, boards of directors, and acquisition performance', *Journal of Business Research*, Vol. 60, No. 4, pp.331–338.

Cui & Leung

Appendix

Variable	Definition of variables
Managerial ability	
MA_SCORE	Raw value of managerial ability measure by using Demerjian et al. (2012).
MA_SCORE_RANK	Ranking value of managerial ability measure by using Demerjian et al. (2012).
Main dependent variables	
ACQ	Dummy variable which equals 1 if firm engages in acquisition, otherwise 0.
SERIAL_HORIZONTAL_ACQUISITION	Dummy variable which equals 1 if acquirer issues bids for five or more targets in any five-year window during the sample period, otherwise 0 by following Fuller, Netter, and Stegemoller (2002). Dummy variable which equals 1 if the acquirer and target are in the same industry (by using 4-digit sic code), otherwise 0.
Characteristic of acquirers	
SIZE	The natural logarithmic value of acquiring firms' assets at the end of the fiscal year before the takeover announcement.
LEVERAGE	The long-term and short-term debt to book value of total assets at the end of the fiscal year before the takeover announcement of acquiring firms.
MB	The market to book ratio which is calculated as acquiring firms' market value of common stock to book value of equity at the end of the fiscal year before takeover announcement.
LIQUIDITY	Liquidity asset adjusted by total asset at the end of the fiscal year before the takeover announcement of acquiring firms.
AGE	Firm age of acquirer.
FCF	Dummy variable equals 1 if acquirer firm has nonnegative free cash flow.
Q	Acquirer's tobin q at the end of fiscal year before the takeover announcement.
GROWTH	Acquirer's sales growth at the end of fiscal year before the takeover announcement.
EP	Acquirer's earnings per share at the end of fiscal year before the takeover announcement.
ROE	Acquirer's return on equity at the end of fiscal year before the takeover announcement.
FCF	Acquirer's free cash flow at the end of fiscal year before the takeover announcement.
Deal characteristics	
DEAL_VALUE	Deal value reported by SDC.
DIVERSIFY	Dummy variable equals 1 if acquirer and target are not in the same industry (by using 4-digit code).
STOCK	Indicator equals 1 if the deal was financed only through stocks and equals 0 otherwise.
CASH	Indicator equals 1 if the deal is financed only through cash, and equals 0 otherwise.