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Does Managerial Ability Affect Corporate Diversification Strategies and Corporate Diversification Performance? Evidence from the US

Hui-Wen Hsu[1]

Abstract

This study investigates whether managerial ability affects the degree of corporate diversification. Further, it examines whether the performance effect of diversification depends on managerial ability. Using a sample of US firms from 2013 to 2017, this study finds that managerial ability is negatively correlated with corporate diversification strategies. This study also found that managerial ability positively moderates the relationship between diversification and firm performance.

JEL classification numbers: G34, M41.
Keywords: Corporate diversification strategies, Managerial ability, Corporate diversification performance.

[1] Department of Public Finance, Feng Chia University.

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1. Introduction

Previous literature provides mixed evidence about the benefits of corporate diversification. Compared to the portfolios of specialized firms, some studies show that diversified firms efficiently allocate capital (Kuppuswamy and Villalonga, 2016) and increases the firm's value (Sturgess, 2016). However, other studies demonstrate that diversified companies inefficiently allocate capital (Ozbas and Scharfstein, 2010) and decreased market values (Denis et al., 2002). Furthermore, diversified businesses are more difficult to manage, and this allows for the abuse of managerial perks and the shirking of responsibilities (Lai and Liu, 2018). Since management is tasked with making decisions on behalf of the company, this study aims to investigate the relationship between managerial ability and corporate diversification strategies to better understand the role of managerial ability in corporate strategic decision-making.

Prior research has investigated the importance of managerial ability from various perspectives. Compared to less capable managers, research shows that more capable managers conduct less tax avoidance activities (Koester et al., 2017), run more successful firms (Ge et al., 2011), improve the information environment of the company (Baik et al., 2018), have a positive effect on the timeliness of financial reporting (Abernathy et al., 2018), lower prices for bank loans (Franco et al., 2017), have fewer instances of financial reporting fraud (Wang et al., 2017), and more efficiently transform corporate resources into firm value (Cornaggia et al., 2017). If the diversified firms are managed by more able managers, superior performance can be expected. Thus, the second purpose of this study is to examine whether the performance effect of diversification depends on the managerial ability. Using a sample of US firms from 2013 to 2017, this study finds that management ability is negatively correlated with business diversification strategies. This study also found that managerial ability positively moderates the relationship between diversification and firm performance.

The remainder of the paper is organized as follows. Section 2 develops the hypotheses. Section 3 presents the research design. Section 4 presents the empirical results. Section 5 presents the conclusion.

2. Hypotheses Development

The advantages and disadvantages of diversification have been widely discussed in literature. Research shows that the executive decides to diversify corporations to build their empires, reduce business risk and extract benefits from the prospects of running a larger company (McDougal and Round, 1984; Gomez-Mejia et al., 2010). Management ability, as an important management feature, has recently received renowned attention. Compared to less-able managers, research find that more-able managers influence corporate outcomes decisively (Bertrand and Schoar, 2003; Choi et al., 2015; Dejong and Ling, 2013). Collectively, these studies show that managerial ability influences firms' decisions and performance. Thus, this paper sheds light on how managerial ability affects corporate diversification. Due to the

conflicting results of the consequence of corporate diversification from prior literature, this paper explores the role of the managerial ability in corporate diversification and specifies the hypothesis in the null form:

Hypothesis 1: Ceteris paribus, managerial ability has no effect on corporate diversification.

For firms with high ability CEOs would better manage the business operations of a company, thereby improving the company's performance (Baik et al., 2011; Chang et al., 2010; Goodman et al., 2013; Jian and Lee, 2011). A successful outcome of corporate diversification usually depends on superior managerial skills and ability. When managers accumulate domain expertise, they become more experienced in the management of company resources (Coff, 1997,1999). Because high-ability managers can transfer corporate resources into firm value more efficiently than their less capable peers (Cornaggia et al., 2017), this paper expects that managerial ability to have a positive impact on the performance of corporate diversification. The second hypothesis is thus developed as follows:

Hypothesis 2: The performance of corporate diversification is positively associated with the managerial ability.

3. Research Design

This study first examines the impact of managerial ability on corporate diversification strategies in hypothesis 1. Following Weng and Chi (2019), this study establishes the following equation:

$$DIVER = \beta_0 + \beta_1 MABILITY + \beta_2 SIZE + \beta_3 CR + \beta_4 LEV + \beta_5 ROA + \beta_6 GROW + \beta_7 \sum IND\_DUM + \beta_8 \sum YEAR\_DUMIND + \varepsilon \quad (1)$$

The variable of interest in hypothesis 1 is the managerial ability (MABILITY). If β1 does not equal zero, it means the managerial ability plays an important role in the corporate diversification strategies.

This study focuses primarily on industrial diversification rather than geographical diversification. This study classifies a company as diversified when it operates in two or more segments, with a four-digit SIC code. Following Chen and Keung (2018), this study uses the Jacquemin and Berry (1979) entropy measure of diversification (DIVER). The entropy measure can be used to distinguish between related diversification (RD) and unrelated diversification (UD). Following prior literature, the managerial ability (MABILITY) is developed from the work of Demerjian et al. (2012). Using a two-stage model, Demerjian et al. (2012) use data envelopment analysis (DEA) to model revenue based on revenue-generating resources to derive a company's total corporate efficiency relative to its industry peers. This study follows the example of previous literature (Jensen and Zajac, 2004)

to control for firm size (SIZE), firm debt capacity (CR), firm leverage (LEV), firm performance (ROA), and growth opportunities (GROW). Finally, this study includes industry and year fixed effects in the model.

This study further investigates the moderating effect of managerial ability on the diversification-firm performance relationship in hypothesis 2. This study employs the following model:

$$ROA = \gamma_0 + \gamma_1 DIVER + \gamma_2 MABILITY + \gamma_3 DIVER \times MABILITY + \gamma_4 EXPROFIT + \gamma_5 SIZE + \gamma_6 GROW + \gamma_7 RISK + \gamma_8 SURPRISE + \gamma_9 RET + \gamma_{10} \sum IND\_DUM + \gamma_{11} \sum YEAR\_DUMIND + \varepsilon \quad (2)$$

To test the moderating effect of managerial ability on corporate diversification performance, this study interacts managerial ability (MABILITY) and corporate diversification (DIVER). Thus, the variable of interest in hypothesis 2 is the interaction term of $DIVER \times MABILITY$.

ROA is a frequently used to measure a firm's performance, as the dependent variable. ROA is defined as the net income to the total assets. Following Lins and Servaes (2002), this study includes some control variables. Excess profitability (EXPROFIT) is measured as operating income divided by sales. Firm size (SIZE), which is measured by the natural logarithm of total assets. Growth opportunity (GROW), which is measured by the ratio of capital expenditures to sales. Firm risk (RISK), which is the standard deviation of monthly equity returns over the previous 60 months. Earnings surprise (SURPRISE), which is the absolute value of difference between current-year earnings per share and prior-year earnings per share, divided by stock price at the beginning of the fiscal year. Market return (RET), which is the market-adjusted stock return for the fiscal year. Finally, this paper includes industry and year fixed effects in the model.

The initial sample includes all firms with business segment data available on the Compustat segment database for the years 2013 to 2017.

The following restrictions on the sample are imposed:

1. Firms with a fiscal year that differs from the calendar year.
2. Firms whose primary businesses are financial services or regulated utilities.
3. Firms that have diversified into financial services or regulated utilities.
4. Total firm sales are at less than $20 million.
5. Aggregated firm segment sales are less than 1 percent of total net sales.
6. Firms with missing and incomplete data.

The financial data, annual stock returns, and managerial ability data were obtained from Compustat, and the Center for Research in Security Prices (CRSP), and Peter Demerjian's website respectively.

4. Empirical Results

4.1 Descriptive Statistics

Table 1 shows the descriptive statistics. The results show that the mean and median value of corporate diversification (DIVER) are 0.150 and 0. The results indicate that the sample in this study are single-segment firms and diversified firms. The mean of managerial ability (MABILITY) is -1.3% with a standard deviation of 0.132. The mean and median value of firm size (SIZE) are 6.726 and 6.780. The mean and median value of firm performance (ROA) are -0.008 and 0.03. Other control variables including firm debt capacity (CR), firm leverage (LEV), growth opportunities (GROW), firm risk (RISK), earnings surprise (SURPRISE), and firm return (RET) are not skewness.

Table 1: Descriptive statistics

Variables	N	Mean	Std	Min	Q1	Q2	Q3	Max
DIVER	9,491	0.150	0.254	0.000	0.000	0.000	0.263	0.944
RD	9,491	0.052	0.159	0.000	0.000	0.000	0.000	0.693
UD	9,491	0.097	0.207	0.000	0.000	0.000	0.000	0.832
MABILITY	9,491	-0.013	0.132	-0.241	-0.097	-0.044	0.035	0.565
EXPROFIT	9,491	-0.043	0.609	-7.458	0.003	0.065	0.133	0.478
SIZE	9,491	6.726	1.862	2.297	5.443	6.780	8.000	11.346
CR	9,491	2.606	1.979	0.354	1.351	2.012	3.122	15.325
LEV	9,491	0.502	0.211	0.068	0.342	0.507	0.657	0.968
ROA	9,491	-0.008	0.152	-1.044	-0.031	0.030	0.070	0.282
GROW	9,491	0.082	0.160	0.000	0.017	0.033	0.068	1.534
RISK	9,491	0.118	0.054	0.042	0.080	0.105	0.142	0.373
SURPRISE	9,491	0.087	0.219	0.000	0.009	0.025	0.072	2.872
RET	9,491	-0.026	0.109	-0.394	-0.089	-0.020	0.035	0.377

Note: 1. Variable Definitions: DIVER is the entropy measure of corporate diversification; RD is the related corporate diversification; UD is the unrelated corporate diversification; MABILITY is the measure of managerial ability; EXPROFIT is the operating income divided by sales; SIZE is the natural logarithm of total assets; CR is the current assets divided by current liabilities; LEV is the total liabilities divided by total assets; ROA is the net income divided by total assets; GROW is measured by the ratio of capital expenditures to sales; RISK is the standard deviation of monthly equity returns over the previous 60 months; SURPRISE is the absolute value of difference between current-year earnings per share and prior-year earnings per share, divided by stock price at the beginning of the fiscal year; RET is the market-adjusted stock return for the fiscal year.

4.2 Correlation Analysis

Table 2 shows the correlation analysis. The result shows that managerial ability (MABILITY) is significantly negative related to firm diversification (DIVER). This preliminary evidence indicates that the high managerial ability world not like to adopt the diversification. In addition, the result shows low inter-correlation among all explanatory variables used in the model. This paper also uses the Variance Inflation Factor (VIF) to test the multicollinearity problem.

Table 2: Correlation analysis

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**
(1) DIVER	1.00												
(2) RD	0.58***	1.00											
(3) UD	0.78***	-0.06***	1.00										
(4) MABILITY	-0.06***	-0.05***	-0.04***	1.00									
(5) EXPROFIT	0.10***	0.06***	0.08***	0.14***	1.00								
(6) SIZE	0.16***	0.11***	0.11***	0.17***	0.26***	1.00							
(7) CR	-0.10***	-0.06***	-0.08***	-0.01	-0.25***	-0.28***	1.00						
(8) LEV	0.10***	0.07***	0.06***	0.03***	0.09***	0.37***	-0.55***	1.00					
(9) ROA	0.12***	0.06***	0.09***	0.14***	0.61***	0.37***	-0.09***	-0.03**	1.00				
(10) GROW	-0.06***	-0.04***	-0.04***	-0.01	-0.09***	0.15***	-0.07***	-0.01	-0.04***	1.00			
(11) RISK	-0.17***	-0.10***	-0.13***	-0.08***	-0.38***	-0.45***	0.13***	-0.05***	-0.48***	0.10***	1.00		
(12)SURPRISE	-0.03***	-0.03***	-0.02	-0.08***	-0.10***	-0.11***	-0.06***	0.08***	-0.26***	0.09***	0.30***	1.00	
(13)RET	0.02	0.01	0.01	0.04***	0.06***	-0.01	0.03***	-0.05***	0.09***	-0.05***	-0.09***	-0.06***	1.00

Note: 1. Pearson correlation are reported in the lower diagonal. 2. n=9,491. 3. See Table 1 for variable definitions.

4.3 Empirical Results

The variable of interest in hypothesis 1 is managerial ability (MABILITY). Table 3 shows that the managerial ability (MABILITY) is negatively related to firm diversification (DIVER), related diversification (RD), and unrelated diversification (UD). The result indicates that firms with higher managerial ability would prefer not to adopt a diversification strategy. Thus, hypothesis 1 is supported.

Table 3: The relationship between managerial ability and diversification strategy

Dependent Variable:	DIVER	RD	UD
INTERCEPT	0.129***	0.041***	0.088***
	(6.350)	(3.260)	(5.160)
MABILITY	-0.121***	-0.051***	-0.071***
	(-6.450)	(-4.490)	(-4.570)
SIZE	0.017***	0.007***	0.010***
	(10.350)	(7.320)	(6.980)
CR	-0.009***	-0.004***	-0.005***
	(-6.400)	(-4.540)	(-4.600)
LEV	0.004	0.014	-0.010
	(0.300)	(1.620)	(-0.830)
ROA	0.067***	0.035***	0.032***
	(4.130)	(3.500)	(2.480)
GROW	-0.148***	-0.045***	-0.103***
	(-8.240)	(-5.610)	(-6.260)
YEAR DUMMIES	YES	YES	YES
INDUSTRY DUMMIES	YES	YES	YES
Adjusted R^2	0.107	0.079	0.082

Note:1. n=9,491. 2. See Table 1 for variable definitions. 3. All t-values are in parentheses. 4. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. 5. The coefficients for the year and industry dummy variables are not reported in the tables as they are not of direct interest for this study.

The variable of interest in hypothesis 2 is the interaction term of diversification and managerial ability. Table 4 shows the coefficient of DIVER×MABILITY and RD×MABILITY are significantly positively correlated to firm performance (ROA). The result indicates that the performance of corporate total diversification and related diversification are positively moderated by managerial ability. Thus, hypothesis 2 is supported.

Table 4: The moderating effect of managerial ability on the performance effect of diversification

Dependent Variables: ROA			
INTERCEPT	0.018**	0.019***	0.019***
	(2.130)	(2.220)	(2.160)
DIVER	0.001		
	(0.270)		
RD		-0.004	
		(-0.610)	
UD			0.001
			(0.300)
MABILITY	0.029**	0.029**	0.036***
	(2.260)	(2.350)	(3.130)
DIVER×MABILITY	0.056*		
	(1.690)		
RD×MABILITY		0.077**	
		(2.080)	
UD×MABILITY			0.010
			(0.200)
EXPROFIT	0.119***	0.119	0.119***
	(19.260)	(19.270	(19.260)
SIZE	0.010***	0.010	0.010***
	(12.320)	(12.400	(12.370)
GROW	0.029***	0.029	0.029***
	(2.910)	(2.890	(2.870)
RISK	-0.516***	-0.517	-0.515***
	(-14.760)	(-14.790	(-14.750)
SURPRISE	-0.095***	-0.096	-0.095***
	(-8.650)	(-8.640	(-8.650)
RET	0.076***	0.076	0.076***
	(5.090)	(5.090	(5.090)
YEAR DUMMIES	YES	YES	YES
INDUSTRY DUMMIES	YES	YES	YES
Adjusted R^2	0.497	0.497	0.497

Note:1. n=9,491. 2. See Table 1 for variable definitions. 3. All t-values are in parentheses. 4. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. 5. The coefficients for the year and industry dummy variables are not reported in the tables as they are not of direct interest for this study.

5. Conclusion

Using a sample of US firms from 2013 to 2017, this study found that managerial ability is negatively correlated with corporate diversification strategy. This study also found that managerial ability positively moderates the relationship between diversification and firm performance. Furthermore, this study sheds new light on the role of managerial ability in the relationship between corporate diversification and firm performance. To the best of our knowledge, this is the first study to examine the moderating effect of managerial ability on the performance of corporate diversification. Whether managerial ability affects the performance of corporate diversification has not been examined in previous literature. The results contribute to a growing literature documenting the economic benefits of highly skilled management. Finally, this study also complements the literature on the relationship between managerial characteristics and important corporate decisions and outcomes.

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