The Relationship Between Managerial Ownership and Firm Performance: Reviewing and Evaluating

Mengxian Di[1, *]

[1] *School of Economics, University of Bristol, Bristol, UK*
[*]*Corresponding author. Email: [a]dimengxian@163.com; [b]guanghua.ren@gecacademy.cn*

ABSTRACT

The purpose of this paper is to organise a clear theoretical framework on the topic of the relationship between managerial ownership and firm performance by reviewing and analysing different prior literature. Firstly, this study investigates the determinants of managerial ownership, which can be treated as a basic concept of this theme. Among previous literature, this relationship can be divided into two types, linear and non-linear, respectively. Furthermore, the former relation includes both positive and negative, while the latter consists of many types of relations, such as U-shaped, inverse U-shaped, hump-shaped and W-shaped. Then, the reasons for these mixed results are explained. Ultimately, the relationship between managers' shares and corporate performance can also be interpreted from different perspectives, including hostile takeover, voting rights and investments.

Keywords: *Corporate governance, managerial ownership, firm performance*

1. INTRODUCTION

In corporate governance, a widely accepted way is to generate a contract under which the agent can operate the companies and perform some services on behalf of the principal, defined as the principal-agent relationship [1]. Berle and Means indicate that their owners do not run many large organisations in the US, and this separation can achieve more effective management and monitoring than combining them in shareholders [2, 3]. However, some scholars suggest that there will be agency problems under the separation of ownership and control [3, 4]. That is, managers who control firms tend to maximise their interests by appropriating the resources of companies and at the expense of the shareholders [4-7]. Moreover, this principal-agent relationship can also lead to information asymmetry between managers and shareholders, which will cause more agency costs and have a negative impact on company performance [1, 8]. Thus, many papers assert that managerial ownership is an effective way to alleviate conflicts and enhance corporate performance [6, 9, 10]. This is because the interests between managers and shareholders are aligned, and managers with equity need to bear the consequences of their decisions [1]. Nevertheless, at the higher level of ownership, executives may regard themselves as the significant shareholders who have enough voting rights

and power to expropriate company resources [10, 11]. Furthermore, managers with higher ownership levels are more likely to consume perquisites because the benefits will outweigh their loss from reducing company values [5, 12]. Thus, managerial ownership can influence the firm performance, but these effects are inconsistent. Hence, the exact relationship between managerial ownership and corporate performance should be a vital topic. This paper investigates and reviews previous literature, organising a clear theoretical framework in this realm.

The main body of this study includes six parts. The next section is about determinants of managerial ownership level. After explaining this conception, this paper focuses on the specific relationship between executive ownership and corporate performance in past literature, consisting of linear and non-linear relations. Then, the reasons for these mixed results can be analysed in section 5. Next, besides the internal factors, this paper also briefly summarises some explanations for the relationship from other perspectives. Finally, the conclusion is in section 6.

2. DETERMINANTS OF MANAGERIAL OWNERSHIP LEVEL

As for the determinants of shares held by managers or executives, there are some explanations. The earlier

research is from Demsetz and Lehn [13], who use cross-sectional data to explore the determinants of ownership structure. The forces that can decide the ownership level could be divided into three parts. Firstly, the value-maximising or firm size is not surprising, which is an observable corporate characteristic [7]. Due to the risk aversion and risk-neutral effect, the cost of capital may increase, and the shareholders of larger companies might be unable to keep highly concentrated ownership. According to Hoang et al. [10], one of the standard measures for this concentration is managerial ownership; thus, there will be a lower level of managerial ownership.

The second factor explained by Demsetz and Lehn is control potential [13], which is associated with managerial performance monitoring. If firms in less predictable environments, managers need to make decisions timely and redeploy the firm's assets frequently. Therefore, the managerial behaviour will be more difficult to monitor, and the owners also want tighter control. Accordingly, an unstable environment may result in more ownership concentration.

The last element is the regulation of some industries. For example, the management of a bank will be replaced if its balance sheet is too risky. Under this condition, the impacts of regulations may hurt ownership concentration, and managerial ownership might be at a low level. Refer to the conclusions of Demsetz and Lehn [13], a more concise explanation is pointed out by Himmelberg et al. [14]. The authors show that the managerial ownership level depends on the company's riskiness, which changes in stock prices can measure. It is more likely that the moral hazard exists in risky firms, and managers may demand more shares to align incentives. Moreover, Himmelberg et al. [14] also demonstrate that some observable factors can influence the level of managerial ownership, such as firm size, risk aversion, and profitability, which is consistent with Chi [7].

Apart from the observable characteristics of companies, some unobservable factors can affect managerial ownership level as well. Both Chi and Himmelberg et al. indicate the firm heterogeneity ought to be another interpretation of the different fraction of shares held by managers among companies and industries. Furthermore, Himmelberg et al. put forward three examples of unobservable heterogeneity, giving a more precise explanation. The first example is that some firms can possess superior monitoring technology. Hence, there will be an optimal contracting environment and efficient management and control system. As a result, the owners can lower managerial ownership level while achieving maximum firm value and avoiding perquisites consumption of managers. Second, the intangible assets will promote the higher level of ownership held by managers because firms with such

assets are harder for management, and shareholders need to adjust the incentives. The third example is associated with variation in market power. Some companies may have competitive advantages in the competitive market and can locate their products with stronger market power. However, once this market power segregates the management decision from the rules of competitive markets, managers may demand higher ownership.

3. ANALYSIS OF THE SPECIFIC RELATIONSHIP

3.1. The linear form of the relationship

With regard to the specific relationship between managerial ownership and firm performance, many scholars showed detailed descriptions. Some research reveals that there is a simple positive relationship between managerial ownership and firm performance. For example, in an earlier study, Demsetz and Lehn [13] estimate that the relationship is positive and linear between ownership level and profit rate, followed by Agrawal and Kumar [15, 9]. This positive and significant relationship can also be supported by agency theory that managerial ownership is an efficient mechanism to reduce agency costs and improve company value [16]. Additionally, as an alternative measure of managerial ownership, the fraction of CEO shares could also positively determine company performance [17, 18]. In Kole [19], the author proposes that the positive relation is more sustained in small firms, considering the firm size. Some researchers use different methods to confirm this relationship. Chung and Elsayed suggest that managerial ownership should positively influence the performance using 2SLS and fixed-effect regression model, respectively [20, 21]. In the view of executive compensation, Elsayed and Elbardan [21] refer to that firm performance has a positive connection with the percentage of equity held by managers and their equity-based compensation. Being opposed to this positive impact, some literature demonstrates a negative relationship between the ownership held by managers or executives and corporate performance [22].

3.2. The non-linear form of this relationship

Further, other literature documents the non-linear associations between managerial ownership and firm value, such as Morck et al. [5], McConnell and Servaes [6, 23], Short and Keasey [12], Benson and Davidson [24], and Duc and Thuy [25]. As a widely-cited paper, Morck et al. is the basis of many kinds of research, and it is necessary to analyse this paper carefully. In this article, the authors identify two company performance measures: one is the market-based measure (Tobin's Q), and the other is the accounting-based measure (profit

rate). For Q and managerial ownership, the relationship will change in various ownership ranges. In detail, the result appears to be a positive relationship at the low level of ownership from 0% to 5%, then turns to negative between 5% and 25%, which is an intermediate-range. Ultimately, there is perhaps a positive association again when the managerial ownership is higher than 25%. However, the regression results of the profit rate, an alternative measure of company performance, and a fraction of shares held by directors are different from that of Tobin's Q. Morck et al. illustrate that the result seems to be positive and statistically significant below the ownership level of 5%, and there may be no particular outcome in other ranges. Additionally, the positive-negative-positive relationship between managerial ownership and corporate performance from Morck et al. is consistent with Short and Keasey [12], who find a cubic relationship. Moreover, this connection only exists for performance measured by Tobin's Q in Morck et al. while it can be found for both accounting (RSE, return on shareholders' equity) and market measure (VAL, a valuation ratio) in Short and Keasey. Specifically, the turning points of RSE are 15.58% and 41.84%, which are similar to that of VAL, 12.99% and 41.99%. Both the turning points are higher than that in Morck et al.. This may be because they extract the data from different markets. Morck et al. collect the US market data while Short and Keasey choose the database of the UK. Similarly, Mura [11] utilises the UK panel data to find a cubic relationship between managerial ownership and firm performance. The first inflexion point of Mura is 15%, which is in line with the result of the performance measured by RSE in Short and Keasey. The relation is negative while the ownership level is from 15% to 45%, but it becomes positive when ownership exceeds 45%. As a result, the second turning point is higher than that in Morck et al. and Short and Keasey. Besides, some other scholars also report a cubic relationship between managerial ownership and company performance, such as Hoang et al. in Vieta and De Miguel et al. in Spain [26], showing an international perspective.

In addition to the cubic relationship, some papers declare the quadratic connection between managerial ownership and firm performance. For instance, McConnell and Servaes [23] regress Tobin's Q against the managerial equity and the square of it to explore an inverse U-shaped relation, resembling the model of Stulz [27] in which the trend between the market value of firms and the managerial ownership first increases and then decreases. Using the sample of 1173 firms from 1976 and 1093 firms from 1986 in the US, McConnell and Servaes [23] put forward that the slope of the curve will upward until the corporate insider ownership approaches around 40% to 50%, after that, the slope seems to become negative. In particular, the slope after the turning point is not as steep as before.

Five years later, the authors extend their research by adding the data of 1943 firms from 1988, and the significant quadratic result remains in the later paper [6]. This inverse U-shaped relationship is also tested in Short and Keasey, whose model comprises both managers' ownership and its square, and the coefficients are positive and negative. Interestingly, Coles et al. [28] generate a structural model, and observe the hump-shaped connection between Tobin's Q and ownership by insiders, which is similar to the inverse U-shape. Additionally, some other literature confirms this inverted U-shaped relationship, namely Himmelberg et al. and Benson and Davidson. Furthermore, there may be other elements in the market that can influence this quadratic relation. McConnell and Servaes consider the growth of firms and indicate that the common stock held by corporate insiders appears to play a more critical role in low-growth companies. Following Barnhart and Rosenstein [18], the coefficients of the quadratic model will become significant after adding the industry dummy variables, whereas no relationship between managerial ownership and corporate value without industry dummies.

After discussing the quadratic and cubic relationship above, there are more complex descriptions of the fraction of managers' shares and corporate performance. Contrary to McConnell and Servaes [6, 23], Duc and Thuy contend a U-shaped relationship [25]. Moreover, Davies et al. point out a quintic model [29], proposing the two-hump shape curve between managerial ownership and firm performance. What's more, the W-shaped and inverse W- shaped relation are documented by Cui and Hermalin and Weisbach respectively [30]. From Cui and Mak [17], by investigating the high R&D firms, this paper finds that the Tobin's Q will decline as the growth of managerial ownership originally from 0% to 10%, and rise in the range of 10% to 30%, then decrease again between 30% and 50%. Finally, Tobin's Q tends to grow continuously when the ownership level exceeds 50%. Furthermore, the coefficient of insider ownership is negative while that of squared managerial ownership is positive, which is opposed to the conclusion of McConnell and Servaes [6, 23]. Nevertheless, the association between the percentage of shares held by directors and ROA, an alternative accounting-based measure of corporate performance, seems to be the opposite for Tobin's Q in Cui and Mak [17]. The different results may be that ROA should not be suitable for measuring performance for high R&D companies [17].

Even though it seems to be well-known that managerial ownership can certainly affect the market value of companies, a part of scholars put forward that there may be no relationship between them. For instance, Demsetz and Villalonga find that managerial ownership

cannot influence the firm value by using Two Stage Least Squares (2SLS) [31]. This result is confirmed by Cho and Loderer, and Martin as well [32, 33].

4. THE REASONS FOR MIXED RESULTS

Although most of the literature declares that the relation between managerial ownership and value of the company is non-linear, it is apparent that the descriptions of this relation are still with mixed results such as inverse U-shaped [6, 23, 24], W-shaped and two-hump shape [17, 29]. Some reasons can interpret the various results among the literature.

To begin with, the evidence of alignment and entrenchment is not substantial enough at the middle or higher level of managerial ownership [34]. Under the principal-agent relationship, individual actions of agents cannot be observed or controlled easily, and information asymmetry will occur. As a consequence, this condition may lead to moral hazard problems [35]. Florackis et al. argue that the problem appears to have a converse impact on corporate performance, dominating at different levels of managerial ownership [34]. The authors also report that the alignment effect exists at the lower proportion of common stock held by managers, around 15%. Therefore, it may be not credible to infer this phenomenon at the higher level of ownership.

The next reason is associated with empirical techniques used among various literature such as piecewise regressions and higher-order polynomials model, which are inadequate to fully explore the exact connection between managerial ownership and firm performance [34]. From Agrawal and Knoeber [15], the authors apply different empirical methods to test the relationship. Accurately, the fraction of shares held by directors can determine Tobin's Q positively through OLS regression, whereas this effect is not significant when using 3SLS.

Third, the less consistency among literature may be because of different measures for firm performance. According to Palia and Lichtenberg [36], the market-based measure focuses on future performance but the accounting-based measure shows the achievements in the past. Consequently, the relationship between these two measures for performance and managerial ownership may be different even opposed. For example, Morck et al. [5] identify the positive-negative-positive relation between three ranges of ownership and Tobin's Q, but there is only one piece of insider ownership from 0% to 5% that can influence ROA significantly and positively. Another example is Cui and Mak [17], who also apply Tobin's Q and ROA in the research, but receive the opposite result. Furthermore, many kinds of literature choose a variety of measures for firm performance such as return on shareholders' equity and a value ratio in Short and Keasey [12], profit rate in

Demsetz and Lehn and market share in Alabdullah [13, 16]. Consequently, the results of the literature seem to lack consensus due to the different measures of performance.

Eventually, some observable characteristics such as firm size and industry should be considered when explaining the mixed results. Comparing the sample of Morck et al. and McConnell and Servaes [6, 23], the major difference is that the former only includes large companies but the latter consists of small firms. Among large firms, there is a piecewise linear relationship while an inverted U-shaped connection between managerial ownership and performance of firms is illustrated in small firms [5, 6, 23]. Under Barnhart and Rosenstein [18], if the industry dummy is added into the regression model, the coefficients will be significant to obtain the quadratic relationship. Nevertheless, there is no association without an industry dummy. It is worth mentioning that the result tends to be inconsistent when focusing on a specific industry. Cui and Makassert a W-shaped relation between equity held by managers and corporate performance [17], which is different and more complicated than the results of previous studies. Notably, when Tobin's Q is the dependent variable, the coefficient of managerial ownership in its function is negative while that of squared the ownership is positive. Nevertheless, both of them are significant. This differs from McConnell and Servaes [6, 23]. They demonstrate that the fraction of shares held by managers is positively significantly related to Tobin's Q whereas the square of the ownership negatively impacts Q. Moreover, the W-shaped relationship reveals that Q will increase consistently if the percentage of shares by managers is beyond 50%. This means that alignment effects will occur at a higher managerial ownership level. The interpretation of the difference in this specific industry is that some high R&D firms such as start-up internet companies are more likely to have weak boards with fewer board members. Under this condition, the higher ownership by managers may become sufficient compensation for this weak board governance [17].

5. OTHER EXPLANATIONS FOR THE RELATIONSHIP

5.1 The perspective of the hostile takeover

In effect, managerial ownership is a valid way for incentives internally and a powerful obstacle to an external hostile takeover. Both McConnell and Servaes maintain this opinion [6, 23], which originally comes from the model of Stulz [27]. The hostile bidder must pay the premium if the bidder wants to achieve a takeover and gain control of the target firm. In addition, with the growth of managerial ownership, the premium ought to rise, whereas the probability of successful acquisition may decrease. At a low level of the fraction

of equity owned by insiders, the bidders would like to pay the premium because the benefits from the takeover may exceed this payment. However, the takeover may not happen as the premium increases with the managerial ownership and beyond the expectation of the bidder. McConnell and Servaes point out that the value of a firm seems to be related to the premium that the bidder has to pay positively [6], but negatively influences the probability of a successful takeover. As a consequence, the firm performance may become maximum when the possibility arrives at zero. Based on McConnell and Servaes [23], the probability is zero at the managerial ownership level of 50%. After that, the value of firms will decrease. Apparently, this explanation of the hostile takeover perspective is consistent with the inverse U-shaped empirical results.

5.2 The perspective of voting rights

At the same time, Stulz also suggests that the non-linear relation between managerial ownership and firm performance can be analysed from the view of voting rights [27]. Some prior literature defines that the insider shareholders such as managers and executives who take part in the daily management activities of the company certainly have the voting rights [1, 4]. Voting rights controlled by management play an important role in the ownership structure of corporates, primarily publicly traded firms, and can also influence the operations and value of firms [27]. Specifically, the performance of the company is associated with the fraction of voting rights positively when this proportion is at a lower level. Otherwise, there will be a negative relationship between them as the fraction of voting rights becomes large. Stulz also puts forward that managers and executives can change their voting rights through buying or selling shares they own. Hence, managerial ownership will be connected with firm performance through the changes of voting rights.

5.3 The perspective of investment

Jensen and Meckling reveal that managerial ownership can affect firm performance through investment, and this effect tends to be viewed as two stages [1]. On the one hand, the inside ownership will have an impact on investment in the company, on the other hand, investments may influence the firm value. The first stage is confirmed by Cho [32], who illustrates a piecewise relation between investment and the percentage of ownership held by managers. Namely, the investment will rise positively with ownership level from 0% to 7%. Then the relationship should become negative in the range of 7% to 38%. Finally, the investment is more likely to positively follow managerial ownership when the level is above 38%. Moreover, the second stage is documented by Chan et al. [37], proposing that the investment will impact the corporate performance. Following Cho, both capital expenditure and research and development expense can reflect the investment of the company. On average, the stock price will fluctuate with the growth of these two factors positively. As a result, managerial ownership can influence investment. In turn, the investment may have effects on the corporate value or firm performance.

6. CONCLUSION

By investigating and reviewing prior research, this paper firstly analyses determinants of managerial ownership level in companies. This conception can be regarded as a basic theory of the main topic. Additionally, in some large firms, owners are more likely to employ professional managers or agents to run their companies, and these executives may be in charge of corporate governance. For motivating managers and enhancing firm performance, managerial ownership is proposed to align interests between owners and managers. Besides, the executives' shares can be discussed through two aspects: the observable features such as firm size, control potential of owners and industries, and the unobservable characteristics like firm heterogeneity.

Subsequently, analysis of the specific relationship between managerial ownership and company performance seems to be the essential part of this study. This study summarises both linear forms of the relationship, positive and negative, and non-linear associations comprising positive-negative-positive, inverse U-shaped, and hump-shaped. There are also some more complex models such as two-hump shape curve, W-shaped and inverse W-shaped relationship. Then, this paper interprets four relevant reasons for these mixed results. Eventually, the associations between managerial ownership and firm performance can be explained from a hostile takeover, voting rights, and investment perspectives. Furthermore, this article reviews much relevant literature and provides a clear understanding of corporate governance, but it still remains in the theoretical stage. Thus, we will try to find other latest data to supply new evidence in this field and compare the results with previous studies in future research.

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