Managerial Ability and Enterprise Leverage Ratio: A Case Study of Chinese Companies

Zezhen Jiang[1], Rujing Kong[2,3*], Junguo Hua[2*]

[1]School of Humanity and Law, Henan Agricultural University, Henan, China

[2]School of Economics and Management, Henan Agricultural University, Henan, China

[3]School of Application economy, Renmin University of China, Beijing, China

*Corresponding authors.

Abstract:

The present study aims at investigating the nonlinear impact of managerial capabilities on corporate leverage. To achieve this goal, the panel data of China's A-share listed companies from 2012 to 2019, as well as the dynamic panel threshold regression were utilized. The findings of the study revealed that the managerial ability had an inverted "∩"-shaped threshold effect on the corporate leverage ratio. In other words, a negative correlation was observed when the managerial ability exceeds a certain level. Similarly, an inverted "∩"-shaped threshold effect was observed between the managerial capabilities and corporate leverage ratio in both private and state-owned large enterprises. Furthermore, a positive relationship was also found between managerial capabilities and corporate leverage in small and medium-sized and private enterprises. The influence of managerial ability in promoting corporate leverage was also found to be more obvious under medium power than high power conditions. The findings of the study both enrich the literature on the managers' ability and corporate leverage ratio, and highlight the practical significance of guiding managers to actively participate in corporate "deleveraging."

Keywords*: manager ability; corporate leverage ratio; threshold model; listed companies in China; threshold effect.*

I. INTRODUCTION

Since the introduction of the policy of reform and opening up in China, the country has witnessed rapid economic development and success. However, the 2008 financial crisis led to an exponential growth of the overall leverage level of enterprises [1]. By the turn of the economy to "new normal" mode, the scale of China's debt has rapidly expanded, resulting in the significant rise of the potential risks [2]. If enterprises continue to maintain a high leverage ratio, the burden of debt would lead to a break in the capital chain of the financial system, due to which considerable financial risks in would be most probable. Being highly concerned with such problems, the central government has announced 'deleveraging' as one of the five major tasks of the supply-side structural reform. However, the question of how to fully accomplish the task of "deleveraging" has remained a challenge for all sectors of the society. General Secretary emphasized the forceful, moderate and effective implementation of "three to go, one to drop and one to make up" in the expert symposium on economic situation in 2016. The principle point of promoting "one to go" of

supply-side structural reform is to reduce the leverage of enterprises. In another event held in 2018, the Central Political Bureau emphasized the "better integration of preventing and resolving financial risks and serving the real economy, firmly doing a good job of deleveraging, grasping the strength and rhythm, and coordinating the timing of policy formulation and implementation" in future. The need to achieve structural deleveraging was emphasized once again. These examples are all indications of the increasing importance of deleveraging among policymakers which requires the consideration of both the government and the enterprises.

From an internal perspective, as the core force of the operation and development of a business, managers exert a decisive influence on the scale, direction and choice of investment options in an enterprise. However, despite the diverse and heterogeneous characteristics of managers, managerial competence plays a key role in the allocation and effective use of the resources. Therefore, there exists a direct relationship between a company's ability to maintain its market viability and the capabilities of its managers. Based on the risk aversion and the risk preference hypotheses, the leverage of a firm is both positively and negatively affected by the managers' ability. Accordingly, there may be a nonlinear relationship between the corporate leverage and the managerial ability, i.e., corporate leverage shows an inverted "∩" shape trend of increasing and then decreasing with the increase of managerial ability. Consequently, the accurate determination of the nonlinear relationship between corporate leverage and managerial ability as well as the establishment of the critical value of managerial ability are thoroughly examined in the present study.

Hence, the nonlinear relationship between corporate leverage and managerial competence is examined through using annual data of A-share listed companies from 2012-2019 as the research sample. Moreover, a dynamic panel threshold regression model is further utilized in this regard. Additionally, the question of how to determine the threshold value of managerial competence is addressed. The impact of managerial competence on firm leverage is also investigated under different managerial power, firm size, and nature of ownership. Compared with the existing literature, the present study enjoys a number of possible innovations. First, founded on the systematic study of the structural changes of corporate leverage, the Chinese listed firms' changing patterns of leverage are investigated from the new perspective of managerial ability. As the result, the analysis expands our knowledge about the relationship between intra-firm and managerial heterogeneity and changes in corporate leverage, and provides a theoretical basis as well as an empirical evidence for the formulation and improvement of national macro policies. Moreover, it enables firm shareholders to carefully select competent managers and reduce principal-agent problems. Second, while the majority of the literature on managerial power has simply divided the sample based on subjective criteria (mean or median), made it difficult to objectively examine the relationship among the factors, the present study uses a panel threshold regression model to empirically and dynamically test the influence of managerial power on corporate leverage, offering evidence on the change of corporate leverage. Third, different levels of managerial powers are introduced to investigate their relationship with corporate leverage. This is an important complement to the 'power theory' proposed by BenjaminE (1998)[3] at the level of corporate financial behavior. Furthermore, the impact of managerial power on firm leverage is analyzed in the context of the firms' heterogeneity, the findings of which improve the knowledge on the financial behavior of firms with different ownerships and sizes.

The rest of the paper is organized as follows. Literature review and theoretical analysis on managerial competence and firm leverage are discussed in the second section. Research design and variable selection are presented in the third section. Subsequently, an empirical test is presented and analyzed in the fourth section. Finally, the conclusion of the study is offered in the fifth section.

II. LITERATURE REVIEW, THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

2.1. Literature review

The concept of managerial competence was first proposed by McLellan and was believed to be developed from 'quality.' Managers are considered to be located at the core of the economic activities of an enterprise and the key factor in its survival and development in all aspects. Furthermore, being considered as a high-level resource, managerial competence is the most important intangible asset of an enterprise (Liu Yanlai et al., 2017)[4]. The theory of organizational behavior maintains that managerial competence is the subjective condition under which a leader can perform a task in an enterprise. Moreover, in an uncertain environment, leaders with high levels of managerial competence are deeply aware of the risks and opportunities, tap valuable information, integrate internal and external resources, and promote the long-term development of the enterprise [5]. According to neoclassical economics theory, even managers with dissimilar characteristics tend to make the same choices in the same economic environment [6]. However, based on higher echelon theory, managers have dissimilar perceptual abilities, values, and judgments of external information; therefore, the firm's decision making and ultimate performance are influenced by this managerial heterogeneity [3,7].

Managers' overconfidence is believed by a number of scholars to have an impact on the corporate leverage which is extremely common among managers of the listed companies in China. Furthermore, the debt ratio is also relatively high [8], which can be attributed to the tendency of the overconfident managers to choose a higher gearing structure [9]. Yu, Minggui and Xia, Xinping (2006)[10] empirically analyzed the relationship between managerial overconfidence and adoption of aggressive debt financing decisions by firms. The results revealed a significant and positive relationship between managerial overconfidence and gearing, especially in the short-term debt ratio. In another study, after empirically analyzing the relationship between managerial overconfidence and capital structure, Yan Yonghai and Kong Yusheng (2010)[11] concluded that overconfident managers usually choose debt financing funds, among which short-term debt is the most preferred one.

Yet, from the perspective of managerial preferences and motivations, others argue that managers' investment in risky technologies is stimulated by high debt ratios to acquire new technologies and, accordingly, increase the corporate profits [12]. In addition, Li and Boyang et al. (2019)[13] demonstrated that managers' motivation of profit maximization particularly improves in high operational risk firms, which, consequently, reinforces the effect of long-term financial asset allocation on the increase of corporate leverage. Panayiotis C, Andreou, and Dennis Philip (2016)[14] explored the impact of managerial

competence on banks' liquidity creation as well as risk-taking behavior. They found that while more competent managers were more willing to take more risk and to create more liquidity, they were more likely to take various measures to try to keep the leverage ratio in balance at the time of financial crisis.

Although the logical relationship between managers and firm leverage has been explored in a number of studies, the relationship between managerial competence and the latter has remained understudied. Therefore, it can be argued that the exact impact of managerial competence on firm leverage is not clearly answered.

2.2. Theoretical analysis and research hypotheses

To examine the mechanism of changes in corporate leverage ratio during the China's economic transition from the perspective of managerial competency, the relationship between manager's ability and enterprise leverage ratio is theoretically discussed in the present study.

Managerial competencies are fundamental in the achievement of strategic goals and management effectiveness in enterprises with similar objectives. Such differences in managerial competencies as preference selection, risk avoidance, and social resources may also affect the firm leverage ratio. According to the management theory, enjoying high abilities in controlling risks, learning, and exploiting resources, managers are usually willing to invest in high-risk projects which results in a higher level of corporate risk-taking or 'risk preference hypothesis' [5], and particularly in overheated investment. This investment tendency is not only detrimental to the investors' interests, it increases corporate leverage [15]. Accordingly, a certain influence of managerial competence on corporate leverage is suggested.

Therefore, first, capable managers consider various formal / informal institution building within the firm. In uncertain environments, efficient corporate systems help managers to exert stronger foresight making them capable of better identifying investment opportunities and higher corporate capital expenditures, which in turn leads to higher corporate leverage [5]. In addition, competent managers prefer to shift from long-term fixed assets to short-term financial asset investment, providing the firms with a greater potential incentive to take out bank credit. This leads an increase in indebtedness and, accordingly, higher corporate leverage. Furthermore, such managers can make full use of their own popularity and network, fully integrate and utilize social resources, and make it easier to obtain financing opportunities for banks and other financial institutions. The funds obtained by enterprises through bank credit and other debt financing enter the enterprise's balance sheet as debt, which may lead to an increase in the enterprise leverage when the funds are not efficiently used [16]. Finally, managers competent in taking risks usually show higher innovation and motivation when making investments. The innovation consciousness and risk appetite increase the managers' investment self-confidence, which might make them highly prone to the state of over-investment, and consequently, lead to higher corporate leverage.

Corporate leverage ratio may also be improved by the managers' use of their own higher level of ability. However, while the increase in leverage ratio may have a pull effect on the expansion of corporate assets

when the output growth rate is higher than the debt growth rate, lower output growth and, accordingly, the increase in the leverage ratio hinders the growth of corporate assets [17]. Therefore, managers may not be always able to increase the corporate leverage. This is to say that when managers' ability exceeds a certain level, actions may be taken to reduce the operational risks and control the continuous increase of the leverage in order to ensure the long-term and stable development of the company and its assets and to avoid excessive financial risks. Therefore, it can be argued that managers choose to reduce corporate leverage when their capacity is too high. On the one hand, according to the principal-agent theory, self-interest becomes the managers' priority in case of information asymmetry and accordingly, a conservative approach might be opted to avoid risks when making investment decisions. Comparably, the stronger the manager's ability is, the greater probability of benefiting from the risk-averse investment, an assumption called the 'risk-aversion hypothesis' (He, Wei, Liu, et al., 2016)[6]. Realizing that the leverage of the firms is too high and may expose them to risks, managers are expected to take timely actions to reduce the leverage. Choosing a risk-averse strategy by reducing capital output and avoiding risky projects, managers generate less external debt financing due to the lower investment demand of the firms, which may lead to a decrease in the leverage. In addition, highly competent managers usually consider the development of stock market. It is maintained that the higher the degree of stock market is, the greater help would be provided to solve the problem of information asymmetry between enterprises and investors. As a result, the risk and cost of investors are reduced and the equity financing of enterprises are increased [18]. Therefore, when managers' competence exceeds a certain level, the corporate equity financing scale is chosen to be increased, which eventually leads to the decrease of the corporate leverage. On the other hand, as maintained by He Weifeng and Liu Wei (2016)[5], capable managers usually enjoy such abilities as having strong learning, analytical and leadership abilities, learning from failures and from the managerial experience of developed enterprises. Moreover, they are capable of better running a company through establishing external communication and learning, which results in the substantial development of the enterprise's performance and high own surplus. Moreover, having better foresight and stronger purposefulness, providing high-quality accounting information to the society and building a stronger social status and reputation are among the other characteristics of capable managers which lead to the development of a company and its profitability, which at the time of sufficient surplus results in the increase in the accumulated capital and, accordingly, the decrease of the leverage of the company [5].

To conclude, as managerial competence increases, operators can actively implement strategies and take strong measurements to bring developmental opportunities in short term, to increase the return on net assets to a greater extent, and to increase shareholder's value when managerial competence is below a certain level. Nevertheless, according to DuPont analysis, while using high debt to obtain income increases the leverage of the enterprise and accordingly, the risk of bankruptcy, managers with abilities higher than a certain level are knowledgeable about the firm and the industry and are able to better integrate the internal and external information to form a reliable estimate of the future development of the firm [18]. In addition, realizing that high leverage brings greater business risks to the firm, managers re-adjust the business plan to lessen the leverage. Hence, the hypothesis in the present study is that there is an inverted "∩" non-linear relationship between managerial competence and corporate leverage which initially rises and subsequently falls.

III. Research Design and Variable Interpretation

3.1. Research model setting

To verify the nonlinear relationship between manager's ability and enterprise leverage ratio, the dynamic panel threshold regression model proposed by Hansen was used in the present study. The method is utilized as it can avoid the bias brought by grouping the samples to test by artificial subjective criteria. Moreover, managerial competency intervals can be divided according to the sample data itself. If there is a threshold effect, not only can specific thresholds be given, but the effect of managerial competence on corporate leverage can be studied on different intervals.

When the manager ability is the threshold variable, the independent and the dependent variables are the manager ability and the enterprise leverage ratio, respectively. If only one threshold exists, the threshold model is:

$$Lev_{i,t} = \beta_1 Ma_{i,t} I(Ma_{i,t} \leq \lambda_1) + \beta_2 Ma_{i,t} I(Ma_{i,t} > \lambda_1) + \beta_3 X_{i,t} + \gamma_t + \varepsilon_{i,t} \tag{1}$$

If a double threshold exists, the threshold model is:

$$Lev_{i,t} = \beta_1 Ma_{i,t} I(Ma_{i,t} \leq \lambda_1) + \beta_2 Ma_{i,t} I(\lambda_1 < Ma_{i,t} \leq \lambda_2) + \beta_3 Ma_{i,t} I(Ma_{i,t} > \lambda_2) + \beta_4 X_{i,t} + \gamma_t + \varepsilon_{i,t} \tag{2}$$

where I (g) is an indicative function equals 1 when the event is true or 0 otherwise. M_a and Λ are a threshold variable and a threshold parameter, respectively. Since missing important variables can lead to estimation errors, the enterprise level control variables $X_{i,t}$ are added where Size represents the company's size, Soe signifies the property rights, Tobinq indicates Tobin Q value, Herf denotes the equity concentration, Roa means the total return on assets, and Fixed is the fixed asset ratio. In addition, γ_t denotes the time fixed effect, which is used to control the time trend that affects the change in the leverage ratio and $\varepsilon_{i,t}$ is a random perturbation item.

3.2. Variables and data

3.2.1. Dependent variable: corporate leverage (Lev)

Leverage ratio is generally defined as the ratio of equity capital to the total assets in the balance sheet. It is an index that measures the risk of a firm's liabilities. In this paper, according to Rukai Gong and Yuesing Xu et al. (2019)[2], the corporate leverage ratio is measured by appraising the ratio of total liabilities to the total assets.

3.2.2. Independent variables (threshold variables): managerial competencies (Ma)

In line with Dermerjian et al. (2012)[18], data envelopment analysis (DEA) and Tobit model were used in this study to measure the managerial capability through separating the managerial influence on firm efficiency from the full efficiency of the firm. There are two stages in the model. The first stage uses data envelopment analysis (DEA) to estimate the operational efficiency of the firm, the firm's operating revenue (SALE) as the only output index and operating cost (COST), sum of selling and administrative expenses (SAGA), net fixed assets (PPE), net intangible assets (INTANG), research and development expenses (R&D), and net goodwill (GW) as the input indices. Among the above variables, SALE, COST, and SAGA are applied to the current period number, and the remaining ones to the previous period end number. Calculations are made using the following formula:

$$Max\theta = \frac{SALE}{\partial_1 COST + \partial_2 SAGA + \partial_3 PPE + \partial_4 INTANG + \partial_5 R\&D + \partial_6 GW} \quad (3)$$

The second stage uses the Tobit model regression by year and industry to separate the efficiency of managerial competencies from the operational efficiency of the firm, calculated as in equation (4):

$$\theta = \alpha_0 + \alpha_1 ln\text{Asset} + \alpha_2 \text{MS} + \alpha_3 \text{PFCF} + \alpha_4 ln\text{Age} + \alpha_5 \text{FCL} + \sum \beta_i \text{Year} \cdot t + \sum \gamma_i \text{Industry} \cdot t + \varepsilon \quad (4)$$

where, θ is the DEA efficiency value derived in the first stage, lnAsset denotes the total assets taken as the natural logarithm, MS signifies the sales revenue / industry sales revenue of all firms, PFCF means the firm's free cash flow, set to 1 if greater than 0 or 0 if less than 0, LNAge indicates the firm's establishment years taken as the natural logarithm, FCI suggests the exchange difference, set to 1 if yes or 0 if no, and Year and Industry are the dummy variables. The residual value of this regression results ε is the managerial capacity.

3.2.3. Managerial Power (Power)

According to Zhao, Chunxiang, and Luo, Fei (2013)[19], managerial power is the ability to make corporate strategy move in the direction of one's wishes. Managers' position and the implementation of their decisions are largely determined by their tenure on the board. The higher the manager's tenure on the board is, the less independent the board and the more convenient it will be for them to use their power to manipulate corporate behavior. Therefore, the manager's power was measured by their board representation in this study.

3.2.4. Control variables

Since leverage may also be affected by other factors, variables derived from the characteristics of the firm, industry and corporate governance were also controlled. According Gong, Rukai et al. (2019)[2] and Li et al. (2018)[20], such characteristic variables include the size of the firm (Size) as the natural logarithm of total assets, the return on total assets (Roa) as the ratio of net profit to the average balance of total assets, Tobin's Q (Tobinq) as the sum of total stock market value and liabilities to total book assets the ratio of fixed

assets to total assets, the nature of ownership (Soe), equal to 1 if the actual controller is state-owned and equal to 0 otherwise, and the concentration of equity (Herf) as the sum of the square of the shareholdings of the top five shareholders.

Table I Description of research variables

Variable category	Variable name	Variable definitions
Explained variable	Corporate leverage(Lev)	Ratio of total liabilities to total assets
	Managerial competence(Ma)	Demerjian (2012) proposed DEA-Tobit two-stage regression
Explanatory variables	Managerial power(Power)	The manager's position on the board of directors is 1, non-concurrent directors, 2, concurrent directors 2, 3 concurrent vice chairman, and 4 concurrent chairman.
	Company Size(Size)	Natural logarithm of total assets
	Nature of property rights(Soe)	1 when the actual controller is state-owned, otherwise 0
	Tobin's Q(Tobinq)	The ratio of the sum of the total market value of stocks and liabilities to the total book assets
Control variable	Equity concentration(Herf)	The sum of the square of the shareholding ratio of the top five shareholders of the company
	Return on total assets(Roa)	The ratio of net profit to the average balance of total assets
	Fixed assets ratio(Fixed)	Ratio of net fixed assets to total assets

Ⅳ.MODEL RESULTS AND ANALYSIS

4.1 Descriptive statistics

Table 2 displays the results of descriptive statistics of the main variables. In the full sample group, the average value of corporate leverage ratio (Lev) was 0.4317. This indicates that the overall leverage ratio of Chinese A-share main board listed enterprises is relatively high. The minimum and the maximum values of corporate leverage ratio were 0.0477 and 0.9258, respectively which suggests that the leverage ratio of different sample enterprises is totally different. In addition, the standard deviation was 0.1962, and the degree of dispersion was relatively high, revealing that certain enterprises were highly dependent on debit, and accordingly, facing high financial risks. With regards to the explained variable, the average value of managerial ability (Ma) was -0.0093. The maximum and the minimum values were 0.5539 and -0.6719, respectively. This indicates that the managerial ability of different managers were significantly different. As for the managerial power (Power), the average and the maximum values were over 2.6736 and 4,

respectively, which is an indication of the contribution of managerial power in most companies. The average values of other indicators were reasonable.

TABLE II The descriptive statistics of variables.

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Lev	2681	0.4317	0.1962	0.0477	0.9258
Size	2681	22.594	1.2945	19.844	26.047
Fixed	2681	0.1980	0.1359	0.0019	0.7139
Roa	2681	0.0493	0.0521	-0.1838	0.2191
Tobinq	2681	2.3874	1.6063	0.8847	11.809
Soe	2681	0.3178	0.4657	0	1
Herf	2681	0.1450	0.1049	0.0138	0.5716
Power	2681	2.6736	0.9677	1	4
Ma	2681	-0.0093	0.2400	-0.6719	0.5539

4.2 Model regression analysis

To examine the existence of a threshold effect between managerial ability and corporate leverage ratio, equation (1) and (2) were applied based on the dynamic panel threshold regression model of Hansen. Firstly, the existence of threshold values was needed to be verified. Next, the significance of the threshold values was obtained by performing the threshold regression model on interval sample data. Table 3 shows the estimation of the dynamic panel threshold values and the result of the significance test. As can be observed, defining managerial ability as the threshold variable, the single and the dual threshold tests were significant at the 1% and 5% levels, respectively. This indicates that in the full sample analysis of managerial ability and corporate leverage ratio. The threshold values of managerial ability was -0.1451 and -0.1229, respectively.

TABLE III Estimation of dynamic panel threshold values and significance test

Threshold variable	Model	F_Value	Threshold value	95%confidence interval	10%	5%	1%
Managerial ability	Single threshold test	23.34***	-0.1229	(-0.1247,-0.1214)	12.4643	16.1160	21.2055
	Dual threshold test	17.83**	-0.1451	(-0.1480,-0.1449)	13.4037	15.2541	20.4608

The F-values, relevant critical values, and 95% confidence interval is the results of repeated sampling using the "bootstrap method".*** Significant at 1% ,** Significant at 5% ,*Significant at 10%.

Due to the existence of dual threshold values, the sample was divided into three intervals. The regression results are shown in table 4. When the managerial ability (Ma) is less than -0.1451, it is significantly positively correlated with corporate leverage ratio, suggesting an increase in corporate leverage ratio by the improvement of managerial ability. It remains significantly positively correlated with corporate leverage, when it is between -0.1451 and -0.1229. However, being more than -0.1229, the managerial ability is significantly negatively correlated with corporate leverage ratio suggesting that an increase in the former leads to a decrease in the latter. Therefore, an inverted "∩"-shaped threshold effect could be observed between managerial capabilities and corporate leverage ratio.

Managerial ability (Ma) of less than -0.1229, results in the managers' willingness to take "Risk appetite hypothesis" and to take higher risks for enlarging the company's scale and increasing its profit. The results of which would be the development of the enterprises in short term and the elevation of the value of shareholders. However, the escalation of corporate leverage ratio would be probable which might cause more crisis. This situation can be frequently observed in Chinese enterprises, the reason of which might be the fact that stronger managerial ability indicates the acquiring of more chances and resources to carry out external debit financing. Additionally, competent managers usually invest more and excessively which can easily lead to the increase of corporate leverage ratio. When managerial ability is more than -0.1229, managers use self-advantages entirely to improve corporate performance. They take actions to reduce operational risks. The phenomenon can be observed in well-performed enterprises. In other words, stronger managerial ability results in the enterprise to better retain its effective operation and accordingly, to improve its performance, to reduce external debit financing, and ultimately to decrease its leverage ratio.

TABLE IV Regression results

Variables	Ma (Ma <-0.1451)	Ma (-0.1451≤ Ma≤ -0.1229)	Ma (Ma>-0.1229)	Soe	Roa	lnherf	lnfixed	lntobinq	Obs	Adj-R^2
Results	0.208***	1.141***	0.193***	-0.211***	1.036***	-0.013	5.424***	0.063***	2681	0.1750
	(3.12)	(4.55)	(-3.07)	(-3.06)	(-6.44)	(-0.39)	(17.45)	(3.61)		

*** Significant at 1% ,** Significant at 5% ,*Significant at 10%

4.3. Further analysis based on enterprise heterogeneity

4.3.1. Managerial power

As is mentioned above, there is an inverted "∩"-shaped nonlinear relationship between managerial capabilities and corporate leverage ratio. Decisions made by managers about the companies' and corporates' investment is greatly affected by managerial power (LiuS, WuD. 2016)[21]. Theoretically, managerial ability

and power are closely related. In management, competent managers are usually considered to have more powers. Hence, the question arises is the way, managerial ability and corporate leverage ratio change under different managerial powers and if a nonlinear relationship still exists between them. To answer these questions, managerial power was divided based on the managers' positions into different groups in the present study. Among them, managers who did not concurrently serve as directors, who concurrently served as directors or vice-chairman and who concurrently served as chairman were classified into the low-power group, the medium-power group, and the high-power group, respectively. Due to the insufficient number of samples in the low-power group after balancing panel data, only the medium-power and the high-power groups were analyzed. Table 5 displays the estimation of dynamic panel threshold values and the results of the significance test.

TABLE V Estimation of dynamic panel threshold values and significance test in medium-power group and high-power group

Medium-power group							
Threshold variable	**Model**	**F_Value**	**Threshold value**	**95%confidence interval**	**10%**	**5%**	**1%**
Managerial ability	Single threshold test	12.96*	-0.260	(-0.277,-0.248)	12.167	14.531	19.805
	Dual threshold test	3.99	0.127	(0.123,0.135)	10.512	12.348	20.401

High-power group							
Threshold variable	**Model**	**F_Value**	**Threshold value**	**95%confidence interval**	**10%**	**5%**	**1%**
Managerial ability	Single threshold test	13.90*	-0.449	(-0.472,-0417)	11.995	14.715	20.012
	Dual threshold test	6.620	0.127	(0.131,0.119)	10.473	14.892	18.271

The F-values, relevant critical values, and 95% confidence interval were the results of repeated sampling using the 'bootstrap method.'*** Significant at 1%, ** Significant at 5%,*Significant at 10%.

As shown in Table 5, managerial power was defined as the threshold variable in the medium-power group. As demonstrated, while the single threshold test was significant at the 10% level, the dual threshold test is not significant. This suggests that a certain threshold value of -0.260 exists in the medium-power

group. Regarding the high-power group, the single threshold and the dual threshold tests were significant at the 10% and not significant, respectively, which is an indication of the existence of a certain threshold value of -0.449 in this group.

Due to the existence of the single threshold value, the sample was divided into two intervals. Table 6 demonstrates the regression results. As can be seen in column (1), a positive correlation was observed between the managerial ability and corporate leverage ratio when the former was less than -0.260; it was significant at 5% level. Therefore, when the managerial ability increased, corporate leverage ratio increased accordingly. Moreover, the managerial ability was negatively but not significantly correlated with corporate leverage ratio when it was equal or greater than -0.260. As can be seen in column (2), a positive correlation was observed between the managerial ability and corporate leverage ratio when the former was less than -0.449; it was significant at the level of 10%. Additionally, managerial ability was positively but not significantly correlated with corporate leverage ratio when it was equal or greater than -0.449.

In spite of different index ranges of managerial ability, a positively significantly relationship was observed between the managerial ability and the corporate leverage ratio under different managerial powers. This may be due to the competent managers' preferences for enlarging corporate scale through their own efforts and decisions as having a strong managerial power is effectual in carrying out decisions. Stronger managerial ability is an indication of the managers' more power which suggested their stronger influence on making decisions and seeking of private benefit by excessive investment [22]. However, in the case of intense competition, the demand in the market forces companies to reduce their prices. Accordingly, when product prices become increasingly close to the costs or even variable costs, the marginal contribution of products decreases, leading to a significant increase in the break-even point and operating risks, insufficient cash flow from operating activities, and companies' difficulty in raising equity financing. This in turn requires greater reliance on debt financing to maintain operations, and accordingly, leads to an increase in financial risks and the leverage of companies [23-24].

In the grouped regressions, managerial competence coefficient was significantly higher in the medium power group (0.065) than in the high power group (0.026), which is an indication of its more pronounced contribution to firm leverage in the former group. Since directors and vice-presidents are managers in the medium-power group, they usually have the power to run the companies. When ownership and management right are independent, the latter is at the center and can deploy various production factors [25]. The managers' goal is to maximize their own interest. Thus, choosing to rise the debit-to-financing ratio can relatively increase the shareholding ratio of operators [26]. Therefore, competent managers seek debit financing to increase their own shareholding ratio, which in turn causes in the rise of corporate leverage ratio. Moreover, managers who manage the company are used to reflecting operation performance by expanding investment. Managers with stronger ability are more probable to expand investment. This requires them to raise more fund which increases the corporate leverage ratio. Conversely, managers in high-power group are mainly presidents. Despite the power of the corporate board to supervise and make decisions, due to the limit of time and information asymmetry, directors do not always oppose the presidents' decisions [25], which facilitates the president's implementation of the decisions. In order to restrain self-interested investment, directors are

required to negotiate with counterbalance shareholders to make investment behavior more in line with the goal of maximizing corporate interest when the president makes investment decisions [27]. Under this condition, the president is supposed to consider the long-term interests of the company. Particularly, the president is required to be responsible for shareholders, to choose the form of investment carefully to avoid risks, and to reduce debit and avoid excessive corporate leverage ratio.

TABLE VI Regression result of dynamic panel threshold model

variable	Medium-power group (1)	High-power group (2)
Ma(Ma〈-0.260)	0.065**	
	(2.01)	
Ma(Ma≥-0.260)	-0.045	
	(-1.52)	
Ma(Ma〈-0.449)		0.026*
		(1.99)
Ma(Ma≥-0.449)		0.050
		(0.85)
Infixed	0.138	0.141
	(-1.62)	(0.98)
Intobingq	-0.009***	0.002
	(3.46)	(0.36)
Insize	0.060***	0.087***
	(4.90)	(4.78)
Inherf	0.092	-0.017

	(1.25)	(-0.07)
Inroa	0.482***	-0.224
	(-3.85)	(-1.45)
Obs	1120	434
Adj-	0.1717	0.2596

*** Significant at 1% ,** Significant at 5% ,*Significant at 10%

4.3.2. Size of enterprise

Literature verifies a significant correlation between the size of enterprise and its leverage ratio. Managers' objectives and responsibility vary in companies of different sizes. Correspondingly, managers of diverse abilities have different effects on corporate decision makings and development, which certainly leads to managerial ability to exert influence on corporate leverage ratio. Based on Gong and Xu (2019)[2], the entire sample was divided into two groups of the enterprise's asset size and a dummy variable BIGdmy: a dummy of 1 if companies are in the top 50% and placed in large companies group, and those in SME group if the dummy is of 0. Threshold regression model was used to establish the existence of a nonlinear relationship between managerial ability and corporate leverage ratio in companies with different sizes. Table 7 displays the estimation of threshold values and the results of the significance test.

TABLE VII The estimation of threshold values and the results of test of significance in medium-sized enterprises and large enterprises

Threshold variable	Model	F_Value	Threshold value	95%confidence interval	10%	5%	1%
Medium-sized enterprises group							
Managerial ability	Single threshold test	22.200***	-0.124	(-0.138,-0.117)	12.939	15.800	20.277
	Dual threshold test	8.520	0.390	(0.370,0.395)	10.479	13.259	17.545
Large enterprises group							
Threshold variable	Model	F_Value	Threshold value	95%confidence interval	10%	5%	1%

Managerial ability	Single threshold test	13.150*	-0.254	(-0.267,-0.244)	11.494	14.889	20.080
	Dual threshold test	5.130	0.275	(0.262,0.286)	10.241	11.775	16.404

The F-values, relevant critical values, and 95% confidence interval is the results of repeated sampling using the "bootstrap method".*** Significant at 1% ,** Significant at 5% ,*Significant at 10%.

Managerial ability is defined in table 7 as the threshold variable in the SME group. While the single threshold test was significant at the 1% level, the dual threshold test was not significant, which is an indication of the existence of a certain threshold value of -0.124 in the SME group. Comparably, while the single threshold test was significant at the 10% level, it was not significant for the dual threshold test, in the large company group, indicating the existence of a certain threshold value of -0.254 in the large company group.

Due to the existence of the single threshold value, the sample was divided into two intervals. The regression results are shown in table 8. As can be seen in column (1), a positive correlation of 10% was observed between the managerial ability and the corporate leverage ratio when the former was less than -0.124. Therefore, an increase in the managerial ability led to a rise in the corporate leverage ratio. However, when the managerial ability was equal or greater than -0.124, it was negatively correlated with corporate leverage ratio and was significant at the level of 10%. This suggests that an increase in the managerial ability decreases the corporate leverage ratio, i.e., an inverted "∩"-shaped threshold effect exists between the two variables. The high corporate debit in medium-sized enterprises is due to the relatively scattered industrial organization structure, the intense excessive and disorder competition and not prohibition of repeated low-level construction [28]. By the increase of managerial ability, managers use their own resources and personal networks to seek external financial support. The generation of excessive debit financing by enterprises, results in the increase of the corporate leverage ratio. However, the growing rate of medium-sized enterprises is higher than that of larger companies [29]. Accordingly, corporate internal factors grow. Competent managers usually have strong learning, analytical and leadership abilities. They learn management skills from the failure of well-developed companies and are better able to run the company through external communication and learning. So, the earnings of corporate increase when managerial ability is larger than a specific index. Accordingly, sufficient earnings of a corporate indicates an increase in the accumulated capital and, consequently, the reduction of the corporate leverage ratio.

As can be seen in column (2), a positive correlation of 1% significance was observed between the managerial ability and the corporate leverage ratio when the former was less than -0.254. However, a positive but not a significant correlation was observed between the managerial ability and the corporate leverage ratio when the former was equal or greater than -0.449.Therefore, as managerial ability increased, corporate leverage ratio increased, too. Furthermore, a negative but not a significant correlation was observed between the managerial ability and the corporate leverage ratio when the former was equal or

greater than -0.254. Generally speaking, competent managers can be hired easier by large companies. According to information transfer theory, competent managers usually convey the company's integrity and development advantages outside by effective management, which improves social popularity and increase business credit among companies. The higher the external recognition of the company is, the easier the company can attract investors' attention and supervision, which is conducive to corporate external debit financing and, accordingly, increasing the corporate leverage ratio.

The Ma of medium-sized enterprises was obviously bigger than that of large enterprises, indicating the greater significance of increasing managerial ability on corporate leverage ratio in medium-sized companies. On the one hand, medium-sized companies' board of directors is small, one of the important functions of which is supervising, controlling and evaluating managerial behaviors. When size of the board is small, controlling the board and showing opportunistic behavior are more probable and serious. At this point, to show their operative performance as well as to realize self-interested behavior, competent managers are more inclined to expand their business scale by increasing investment. This will not only increases corporate capital export, but also increases corporate leverage ratio more easily. In large companies, the large board puts pressure on managers and concentrates more on the experts' opinions to scientifically evaluate managerial behaviors in decision makings. Therefore, large companies' supervision system may effectively restrain managerial speculation behaviors. Thus, controlling corporate leverage ratio would be difficult for the managers on their own. On the other hand, the degree of structural differentiation, specialization, and standardization within corporation increases by the expansion of corporation. Unlike medium-sized companies, large companies would not act as 'what one says goes.' The managerial ability is no longer the only factor influencing investment decision makings, i.e., numerous factors need to be considered by companies.

TABLE VIII Regression result of dynamic panel threshold model

variable	Medium-sized enterprises group (1)	Large enterprises group (2)
Ma(Ma 〈-0.124)	0.146* (1.85)	
Ma(Ma≥-0.124)	-0.092* (-1.68)	
Ma(Ma 〈-0.254)		0.072*** (2.630)
Ma(Ma≥-0.254)		-0.021

		(-0.970)
Infixed	0.247*	0.001
	(1.78)	(-0.010)
Intobingq		0.002
	-0.000	
	(-0.13)	(0.440)
Insize	0.092***	0.041***
	(4.78)	(3.240)
Inherf	0.112	0.112
	(-0.67)	(-5.920)
Inroa	0.398***	-0.650***
	(-3.49)	(-5.920)
Obs	798	1043
Adj-	0.2205	0.1697

*** Significant at 1% ,** Significant at 5% ,*Significant at 10%

4.3.3. Property of enterprise

According to the composition of the listed enterprises in Chinese capital market, different mission and goals are specified for managers in state-owned enterprises than those in non-state-owned ones. Thus, making decisions about managerial development differs in the two groups. The question that arises is the way these differences affect the corporate leverage ratio in the two groups of enterprises. Moreover, the existence of a nonlinear relationship between the managerial ability and the priorities of enterprises needs to be investigated. To achieve these goals, threshold estimation and significance test were performed based on the property attributes.

TABLE IX The estimation of threshold values and the results of significance test in state-owned and non-state-owned enterprises

Threshold variable	Model	F_Value	Threshold value	95%confidence interval	10%	5%	1%
Managerial ability	Single threshold test	2.31*	-0.1122	(-0.1125,-0.1120)	13.9395	18.5233	22.6426
	Dual threshold test	14.03*	0.0356	(-0.0149,0.0370)	13.3113	16.1738	21.5044

The F-values, relevant critical values, and 95% confidence interval is the results of repeated sampling using the "bootstrap method".*** Significant at 1% ,** Significant at 5% ,*Significant at 10%.

As can be seen in Table 9, state-owned managerial ability is defined as the threshold variable in the state-owned enterprises group. Both the single and the dual threshold tests were significant at the level of 10%. This suggests the existence of two certain threshold values of -0.1122 and 0.0356 in the state-owned enterprises group. On the other hand, while the single threshold test showed 10% significance, the dual threshold test was not significant in the non-state-owned group, indicating the existence of a certain threshold value of -0.4600 in the this group.

TABLE X Regression result of dynamic panel threshold model

variable	Stated-owned enterprises group (1)	Non-stated-owned enterprisesgroup (2)
Ma(Ma<-0.1122)	0.286** (2.46)	
Ma(-0.1122≤Ma≤0.0356)	-0.417 (-1.36)	
Ma(Ma>0.0356)	-1.356 *** (-2.97)	
Ma(Ma<-0.4600)		1.575***

		(3.10)
Ma(Ma≥-0.4600)		0.742**
		(2.07)
Infixed	-0.030	0.091 ***
	(-1.19)	(2.23)
Intobingq	0.027 ***	-0.052
	(1.14)	(-1.08)
Insize	-0.030***	7.277***
	(17.45)	(8.82)
Inherf	0.118 ***	0.018
	(2.63)	(0.20)
Inroa	-1.024***	-1.018***
	(-4.76)	(-6.32)
Obs	819	414
Adj-	0.0844	0.2824

*** Significant at 1% ,** Significant at 5% ,*Significant at 10%

Due to the existence of dual threshold values, the sample was divided into three intervals in the state-owned enterprises group. As can be seen in Table 10, a significant positive correlation was observed between the managerial ability and the corporate leverage ratio when the former (Ma) was less than -0.1229. This suggests that the improvement of managerial ability led to an increase in corporate leverage ratio. However, a positive but not a significant correlation was observed between the managerial ability and the corporate leverage ratio, when the former was between -0.1122 to 0.0356. However, when being more than 0.0356, the managerial ability was significantly negatively correlated with corporate leverage ratio, showing that as the former increases, the latter decreases. The data suggests the existence of nonlinear relationship between the two variables in the state-owned enterprises. The reasons for the positive influence are discussed in the following. First is the implicit government guarantees of state-owned enterprises as an essentially rigid acceptance which provide great security and convenience for its financing. Accordingly, competent managers particularly utilize their interpersonal networks to easily obtain preferential policy information and the government's support. Secondly, state-owned enterprises generally have good social reputation. As a result, competent managers tend to promote the image of the enterprises and establish good and serious

cooperative relations with financial institutions. As a result, banks and financial institutions tend to provide financial service to state-owned enterprises, leading to the increase of their leverage ratio. Besides, Chinese state-owned enterprises lack a reliable liability system. Even at the time of a problem, measurements are taken by the government to assist them through. While this stimulates competent managers to easily generate financing impulse, it makes it difficult for them to take the responsibility of investment failure. Given that the assessment system of state-owned enterprises lacks constraints on the corporate leverage ratio, more competent managers are able to strongly urge the corporate to increase the leverage ratio.

Since the final controller of state-owned enterprises is the government, the corporate leverage ratio decreases as the managerial ability increases when Ma is larger than a specific index. Considering the reputation of the state-owned enterprises as well as the political factors, managers decide to avoid high-risk projects. Competent managers easily become conservative and try to avoid raising the debit levels by taking high-risk investment projects and consequently, to reduce the corporate leverage ratio. Additionally, they usually have strong learning, analytical and leadership capabilities, as well as powerful organization force and productivity. With the continuous implementation of the 'deleveraging' policy, powerful managers thoroughly carry out policies based on the actual situations, and as a result, reduce the corporate leverage ratio by effective management and decisions.

On the other hand, in non-state-owned enterprises, due to the existence of a single threshold value, the sample was divided into two intervals. As can be seen in table10, a significant positive correlation was observed between the managerial ability and corporate leverage ratio when the former is less than -0.4600. Therefore, as managerial ability increased, corporate leverage ratio increased, as well. However, when the managerial ability was equal or greater than-0.4600, it remained positively and significantly correlated to corporate leverage ratio. Nevertheless, the significance was slightly lower than that of the previous interval, suggesting that as managerial ability increases, corporate leverage ratio increases, too. The tendency was fully in line with the current economic market. On the one hand, owing to the improvement of operating conditions of state-owned enterprises, they squeeze to some extent the profits of non-state-owned enterprises. While numerous factors have led to the significant improvement of the profitability of the upstream industries controlled by state-owned enterprises, the downstream industries mainly controlled by private enterprises were required to abide to the increases in the corresponding upstream product prices. This led to the capital expenditure of the latter to be further limited by the scale of profit retention. To expand assets, competent managers were usually and relatively more dependent on debit expansion which eventually led to the increase of corporate leverage ratio. On the other hand, to solve the corporate funding problem of non-state-owned enterprises, the manages tended to obtain capital through external debt financing. Powerful managers seek financing through multiple channels. However, compared with state-owned enterprises and due to credit contraction, non-state-owned ones faced more financing problems, causing them to suffer more from debt services and further erosion of their profits due to the rapid rise in financial costs. In other words, the performance of non-state-owned enterprises was impaired and they faced severe fund shortages by the relatively tight financing constraints. This in turn led to an increase in their liabilities as well as the corporate leverage ratio.

In group regression, the Ma of non-state-owned enterprises was larger than that of state-owned enterprises, indicating the more influence of promoting managerial ability on corporate leverage ratio in non-state-owned enterprises. In view of this, non-state-owned enterprises attempted to maximize the shareholders' interests, to strengthen the causal association between corporate performance and the managers' efforts, and to reinforce the supervision and incentives for managers. Given that the payment of such managers was closely related to the performance of the enterprises, according to the overall consideration of salary incentives and future career development, competent managers were more inclined to choose projects with greater risks but better returns of investment, which increased the corporate leverage ratio. However, the major investment behaviors of state-owned enterprises are still controlled and supervised by the SASAC to a certain extent [30]. Due to the government's as well as the other relevant departments' interventions, in state-owned enterprises, managerial ability in corporate decision-making of such companies was not as strong as that of non-state-owned enterprises. Therefore, deciding to expand investment through managers' own abilities to increase corporate leverage ratio, is a more obvious phenomenon in non-state-owned enterprises. On the other hand, the government and state-owned banks have 'soft budget constraints' on state-owned enterprises. State-owned enterprises had fewer financing constraints than non-state-owned ones. When state-owned enterprise managers decided to obtain external financing, the procedure was facilitated by financial institutions. This is despite the higher costs of bank loans, bond financing, equity financing, etc. for non-state-owned enterprises. In such enterprises, managerial ability became particularly important when they needed external financing. When facing tight financing, competent managers were able to make full use of their resources to solve the company's problems. Therefore, it can be concluded that the promoting effect of managerial ability on corporate leverage ratio is more obvious in non-state-owned enterprises.

4.4. Robustness test

A robustness test was conducted to further examine the conclusions. Firstly, we refered to Li Jianjun et al. (2018)[20]. Since the value of enterprises' intangible assets was hard to measure, the ratio of tangible assets to liability was selected as the explained variable to conduct a robustness test. Despite certain differences, the sign and significance of the regression coefficients were similar to the previous empirical results. Secondly, we refered to Liu Guanchun et al. (2018)[31] and selected a number of firm-level characteristics such as the first shareholder's shareholding ratio, operating cash flow, profitability, etc., as the control variables. The regression results showed that irrespective of robustness test method, the conclusions remained unchanged.

Ⅴ. CONCLUSIONS AND PROPOSALS

During the global economic downturn and hard recovery, managers' motivation and initiative spirit, avoiding business risks and promoting economic development and, accordingly, reducing corporate leverage ratio to prevent potential economic crisis have turned into an important issue for corporates' finance and even capital market research. Information about China's A-share listed companies from 2012 to 2019 were adopted in the present study. Data Envelopment Analysis was utilized trough the dynamic panel threshold regression method for the first time to measure managerial ability and investigate its nonlinear

impact on corporate leverage ratio. The main results are as follows. Firstly, there found an inverted "∩"-shaped nonlinear relationship between managerial ability and corporate leverage ratio under different managerial ability levels. Secondly, the improving effect of managerial ability on corporate leverage ratio was demonstrated to be more significant in medium-power group than in high-power one. Thirdly, in state-owned medium-sized enterprises, a significant inverted "∩"-shaped nonlinear relationship was observed between the managerial ability and corporate leverage ratio. However, managerial ability was positively correlated with corporate leverage ratio in non-state-owned large enterprises indicating the relationship between the intensity of managerial ability and corporate leverage ratio, the degree of which changes according to the corporates' properties and size.

As direct decision makers, managers' abilities directly influenced the corporate leverage ratio. Based on the influence path of 'managerial ability-managerial behavior-corporate leverage ratio,' threshold the regression model was adopted to test the impact of managerial ability on corporate leverage ratio from a dynamic perspective, providing new evidence for the changes of corporate leverage ratio. The results enriches the literature on managerial ability and corporate leverage ratio. Moreover, the empirical results also corroborated the 'deleveraging' of supply side structural reforms. Therefore, the following policy recommendations are proposed:

From the perspective of the government: Firstly, establish a long-term mechanism of 'deleveraging' by improving the managerial ability. (1) Construct a reliable system of selecting and appointing managers in state-owned enterprises, which allows the occupation of key positions by competent managers, and, accordingly, leading to the improvement of the corporates' performance, avoidance of financial risks, and the better performance of the pillar role by the state-owned economy. (2) Actively promote the professional managers' market, establish a comprehensive system for evaluating performance ability and quality, develop a complete market mechanism in the selection and appointment of managers of non-state-owned enterprises, and build a team of managers with Chinese characteristics. Secondly, encourage state-owned enterprises to reorganize, restructure, and develop a mixed-ownership economy. (1) Absorb high-quality private capital for restructuring state-owned enterprises, reduce the proportion of state-owned capital's equity, and optimize the equity and power structures. (2) Establish a managerial salary incentive system that matches the corporate operating performance, strengthens the responsibility system for managers, and keeps the debt and business scale at a reasonable level.

From the perspective of enterprises: First, select managers seriously and establish a reliable employment mechanism. Enterprises are recommended to rely on the internal and external manager market, to broaden and enrich the selection and employment channels and forms, to fully inspect and evaluate and to prudently hire managers. Second, focus on the improvement of managerial ability and provide managers with good conditions and support. Enterprises are supposed to accentuate the importance of learning and training of managers, let them gain more knowledge and experience and, consequently, develop their human capital value. Second, establish a reliable performance appraisal system for managers according to the strategic goals of enterprises. Ensure that managers consider both their own and the enterprise' interests, focus on short-term as well as long-term interests, and that they are concerned with the corporate performance and

risk prevention. Finally, make full use of the managers' own resources, information and, judgment advantages, improve the efficiency of investment and financing, strike the balance between enterprise development and risk prevention, encourage managers to innovate the investment and financing methods, expand financing channels, and facilitate the financing constraints faced by enterprises.

From the perspective of financial institutions: First, fully comprehend the managers' information and the company's operating conditions, implement differentiated policies to support the development of the enterprise and avoid preferential policies for merely formalities. Second, financial institutions are recommended to make reasonable concessions to enterprises and try to alleviate the problem of expensive financing, the examples of which are the implementation of a tax deduction policy on the enterprises' equity to reduce the cost of equity financing, decreasing the interest rates of financial sector to generate profits, and the reduction of banks' charges to increase profits, etc.

REFERENCE

[1]   Wang Yuwei, Sheng Tianxiang, and Zhou Geng, 2018, "Macro Policy, Financial Resource Allocation and High Leverage Ratio of Corporate Sector", "Financial Research", Issue 1, pp.36-52.

[2]   Gong Rukai, Xu Yuexing and Wang Dazhong, 2019,"Economic Policy Uncertainty and Corporate Leverage Ratio", "Financial Research", Issue 10, pp. 59-78.

[3]   Benjamin E, Hermalin, Michael and Weisbach, 1998, "Endogenously Chosen Boards of Directors and Their Monitoring of the CEO" 1, pp.96-118.

[4]   Liu Yanlai, 2017, "A Summary of the Latest Research Progress of Manager Ability at Home and Abroad", "Modern Business and Trade Industry", Issue 36,pp.70-72.

[5]   He Weifeng, Liu Wei and Huang Kaili, 2016, "Manager's Ability and Corporate Risk-taking", "China Soft Science", Issue 5, pp, 107-118.

[6]   He Weifeng and Liu Wei, 2015, "Business Manager Capability and Audit Fees", "Accounting Research", Issue 1, pp, 82-89, Page 97.

[7]   Jiang Fuxiu, Zhang Min, Lu Zhengfei and Chen Caidong,2009,"Managers' Overconfidence, Enterprise Expansion and Financial Distress", "Economic Research", Issue 1,pp.131-143.

[8]   Lucian Arye Bebchuk, 2002,"Ex Ante Costs of Violating Absolute Priority in Bankruptcy", The Journal of Finance, 1.

[9]   Song Fengxuan and Zhang Yan,2010,"Research on the Correlation between Managers' Overconfidence and Corporate Capital Structure——Based on Empirical Data of Chinese Listed Companies", "Industry and Technology Forum", Issue 3, pp145-148, Page 107 page.

[10]   Yu Minggui, Xia Xinping, and Zou Zhensong,2006,"Managers' Overconfidence and Corporate Aggressive Debt Behavior", "Management World", Issue 8, pp.104-112, page 125, page 172.

[11]   Yan Yonghai and Kong Yusheng, 2010,"Empirical Analysis of the Impact of General Manager Overconfidence on Capital Structure", "Forecast", Issue 4, pp.58-63.

[12]   Klaus Meyer, 1998," Enterprise Transformation and Foreign Investment in Eastern Europe", Journal of East-West Business, 4, pp, 1-2.

[13]   Li Boyang, Shen Yue and Zhang Jiawang,2019,"Financial Asset Allocation, Enterprise Operation Risk and Enterprise Leverage Ratio", "Contemporary Economic Science", Issue 5,pp.116-128.

[14]   Panayiotis C, Andreou, Dennis Philip and Peter Robejsek, 2016," Bank Liquidity Creation and Risk‐Taking: Does Managerial Ability Matter?", Journal of Business Finance &amp,Accounting,43,pp,1-2.

[15]   Zhao Chunxiang and Zhang Dunli,2013,"Research on Manager Power and Enterprise Investment Relationship from the Perspective of Market Competition", "Accounting Research", Issue 10, pp.67-74, page 97.

[16]   Tan Xiaofen,Li Yuan and Gou Qin,2019,"Does U.S. Monetary Policy Boost the Leverage Ratio of Non-financial Enterprises in Emerging Market Countries?", Financial Research, Issue 8,pp.38-57.

[17]   Krishnan G V and Wang C, 2014,"The Relation between Managerial Ability and Audit Fees and Going Concern Opinions", Auditing A Journal of Practice & Theory, 3, pp, 139-160.

[18]   Tan Xiaofen, Li Yuan and Wang Kexin, 2019,"Financial Structure and "Deleveraging" of Non-financial Enterprises", "China Industrial Economy", Issue 2, pp. 23-41.

[19]   Peter Demerjian, Baruch Lev and Sarah McVay, 2012,"Quantifying Managerial Ability: A New Measure and Validity Tests", 7.

[20]   Zhao Chunxiang and Luo Fei, 2013, "Market Competition, Manager Power and Salary Stickiness", "Contemporary Finance", Issue 10, pp.76-85.

[21]   Li Jianjun and Zhang Shuyao,2018,"Tax Burden, Financial Subsidy and Corporate Leverage Ratio", "Financial Research", Issue 5,pp.86-98.

[22]   Liu S, Wu D. 2016, Competing By Conducting Good Deeds: the Peer Effect of Corporate Social Responsibility. Finance Research Letters, 16(6): 47-54.

[23]   Leo Sleuwaegen and Micheline Goedhuys, 2002," Growth of firms in developing countries, evidence from Côte d'Ivoire", Journal of Development Economics, 1.

[24]   Chintrakarn, Jiraporn and Kim, Kim, 2015, Does corporate governance quality affect analyst coverage? Evidence from the Institutional Shareholder Services (ISS)", Applied Economics Letters, 4.

[25]   Todd A. Gormley and David A. Matsa, 2011, Growing Out of Trouble? Corporate Responses to Liability Risk", 8, pp, 2781-2821.

[26]   Foucault T., L. Fresard., Learning from peers' stock prices and corporate investment. Journal of Financial Economics. 2014, 111(3): 187-243.

[27]   Kaustia M, Rantala V. 2015, Social Learning and Corporate Peer Effects. Journal of Financial Economics, 117(3): 653-669.

[28]   Kwangho Park, InsunYang, Taeyong Yang. 2017, The Peer-firm Effect on Firm's Investment Decisions. North American Journal of Economics and Finance.

[29]   Shenglan Chen, Hui Ma. 2017, Peer effects in decision-making: Evidence from corporate investment. China Journal of Accounting Research, 10(02): 167-188.

[30]   Ethan M. J. Lieber, William Skimmyhorn, 2018, Peer effects in financial decision-making. Journal of Public Economics, 2018, 163.

[31]   S. Trevis Certo, Tim R. Holcomband R. Michael Holmes, 2009, IPO Research in Management and Entrepreneurship: Moving the Agenda Forward", 6, pp, 1340-1378.

[32]   Liu Guanchun, Zhang Jun and Liu Yuanyuan, 2018,"Financial Asset Allocation, Macroeconomic Environment and Corporate Leverage Ratio", "World Economy", Issue 1, Pages 148-173.