RESEARCH ON THE INFLUENCE OF MANAGEMENT INCENTIVE ON ENTERPRISE PERFORMANCE OF LISTED COMPANIES IN CHINESE PHARMACEUTICAL MANUFACTURING INDUSTRY

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SUBMITTED AS A PARTIAL FULFILLMENT REQUIRED FOR

THE MASTER OF BUSINESS ADMINISTRATION DEGREE

INTERNATIONAL PROGRAM, GRADUATE SCHOOL OF BUSINESS,

SIAM UNIVERSITY, BANGKOK, THAILAND

2022

RESEARCH ON THE INFLUENCE OF MANAGEMENT INCENTIVE ON ENTERPRISE PERFORMANCE OF LISTED COMPANIES IN CHINESE PHARMACEUTICAL MANUFACTURING INDUSTRY

Thematic Certificate

To

SHIMING ZHU

This Independent Study has been approved as a Partial Fulfillment of the Requirement of International Master of Business Administration in International Business Management

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Declaration

I, SHIMING ZHU, hereby certify that the work embodied in this independent study entitled "RESEARCH ON THE INFLUENCE OF MANAGEMENT INCENTIVE ON ENTERPRISE PERFORMANCE OF LISTED COMPANIES IN CHINESE PHARMACEUTICAL MANUFACTURING INDUSTRY" is result of original research and has not been submitted for a higher degree to any other university or institution.

(SHIMING ZHU)

Sept 1, 2022

Title: Research on the Influence of Management Incentive on Enterprise Performance of Listed Companies in Chinese Pharmaceutical Manufacturing Industry

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Degree: Master of Business Administration

Major: International Business Management

Advisor: .....

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.....24...../.....10...../.....2022.....

ABSTRACT

Many factors have promoted the rapid development of the global pharmaceutical industry. In this era of increasingly fierce competition, how to motivate the management to play a role and seek greater economic benefits for the enterprise has become a concern of enterprise stakeholders. Equity incentives and compensation incentives are companies that stimulate the enthusiasm of the management by giving the management a certain shareholding ratio or salary. These two incentives firmly link the interests of the management with the performance of the enterprise. The better the development of enterprise performance, the greater the self-interest of management will be. This is also a common incentive method in the development process of modern enterprises.

Whether management incentives have a positive impact on firm performance or not was the purpose of this study. Based on human capital theory, stakeholder theory, and principal-agent theory, this paper selected the data of 152 listed companies in China's pharmaceutical manufacturing industry from 2017 to 2021 using the combination of qualitative and quantitative methods to study the relationship between management incentives and corporate performance. Among them, the dependent variable was corporate performance, and the independent variables were management incentives, financial leverage, corporate asset size, equity concentration, corporate growth, and corporate nature. According to the analysis, the following conclusions were drawn: 1) there was a significant positive correlation between management incentives and corporate performance in listed pharmaceutical manufacturing companies; 2) there was a significant negative correlation between the financial leverage of listed companies in the pharmaceutical manufacturing industry and corporate performance; 3) there was a significant positive correlation between equity concentration and corporate performance of listed companies in the pharmaceutical manufacturing industry; 4) there was a significant positive correlation between the growth ability of listed companies in the pharmaceutical manufacturing industry and corporate performance. Finally, by summarizing the conclusions, four suggestions were put forward to formulate a reasonable management incentive plan, rationally use the financial leverage of the enterprise, reasonably adjust the degree of equity concentration of the enterprise, and rationally formulate a performance appraisal index system.

Keywords: pharmaceutical manufacturing industry, management incentives, enterprise performance

题目： 中国医药制造业上市公司管理层激励对企业绩效的影响研究
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摘要

诸多因素推动了全球医药行业的快速发展。在这个竞争日益激烈的时代，企业如何激励管理层发挥作用，为企业谋求更大的经济效益成为企业利益相关者一直关注的问题。股权激励和薪酬激励是公司通过给予管理层一定的持股比例或薪酬来激发管理层的工作积极性，这两种激励手段牢牢地将管理层的利益与企业的绩效联系在一起，企业绩效发展的越好，管理层所收获的自身利益将会越大。这也是现代企业发展过程中比较常见的一种激励手段。

管理层激励是否对企业绩效有正向影响是本文的研究目的。本文以人力资本理论、利益相关者理论和委托代理理论为理论基础，选取中国医药制造业 2017-2021 年 152 家上市公司的数据，采用定性与定量相结合的方法对管理层激励与企业绩效之间的关系进行研究。其中，因变量为企业绩效，自变量为管理层激励、财务杠杆、企业资产规模、股权集中度、企业成长性和企业性质。根据分析得到以下结论：第一，医药制造业上市公司管理层激励与企业绩效存在显著的正相关关系。第二，医药制造业上市公司财务杠杆与企业绩效之间存在显著的负相关关系。第三，医药制造业上市公司股权集中度与与企业绩效之间存在显著的正相关关系。第四，医药制造业上市公司成长能力与与企业绩效之间存在显著的正相关关系。最后通过总结结论，提出制定合理的管理层激励方案，合理利用企业的财务杠杆，合理调整企业的股权集中程度和合理制定绩效考核指标体系四点建议。

关键词：医药制造业，管理层激励，企业绩效

ACKNOWLEDGEMENT

In the blink of an eye, my study abroad in Thailand will soon come to an end, but I still feel like I did when I first walked through the school gates, curious about everything at the school. Although it is always sad to say goodbye, it is only at this moment that I can look back on the various things I have experienced while studying in Thailand and truly feel how enjoyable it has been to get along with my teachers, classmates and friends here, and how privileged I feel to have spent a wonderful postgraduate life in Thailand with them.

I would like to express my special thanks to the teachers who taught me on the postgraduate course, who taught me not only knowledge but also the ability to think independently and solve problems, which will be of lifelong benefit to me.

Finally, I would like to thank my family and my classmates. I can't help but follow in your footsteps as you all have been living and learning wonderfully; in life, you have been so full of aspirations and pursuits for the future that I can't help but follow in your footsteps; in learning, we have been like fighters on the battlefield, going forward and solving one problem after another together.

ShiMing Zhu

2022

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1. Introduction

1.1 Research Background

As times change and society progresses, enterprises have evolved from classical enterprises to modern enterprises where ownership and management are separated from each other. Under this modern corporate management model, the owner of the enterprise entrusts the manager of the enterprise to manage the operation of the enterprise on his behalf. The primary goal of enterprise development is to improve its own performance, and the equity incentive system can largely motivate the management to work hard to improve the performance of the enterprise. As a modern method of corporate incentive, the equity incentive system allows managers to participate in corporate decision making as shareholders and share the risk with the company, thus reducing the cost of proxy and improving corporate performance(Yu Yangyang & Wang Haiyan, 2022). Since 2020, with the outbreak of the novel coronavirus outbreak, China's listed pharmaceutical manufacturing companies have become one of the more popular sectors for domestic investors, with the number of industrial enterprises above the size of China's pharmaceutical manufacturing sector growing at a record rate since 2012(Source: national Bureau of Statistics of China, 2022). The pharmaceutical industry is an integrated industry that combines modern and traditional industries and plays an important role in the national economy. The pharmaceutical industry has an important significance to social development, it can promote economic development, improve the quality of life and improve people's health index. As the pharmaceutical manufacturing industry continues to grow and the demand for healthcare increases, the industry is playing an increasingly important role in the sustainable development of the national economy and industrial society.

1.2 Research Problems

Due to the outbreak of COVID-19, listed companies in China's pharmaceutical manufacturing sector are sought after by investors. By increasing the shareholding ratio of management or increasing the remuneration of management, can it indirectly stimulate the enthusiasm of management, have a positive stimulating effect on enterprise performance, and which factors may affect enterprise performance, and whether it can improve the strength of enterprises through rational use? This is the issue that the article should pay attention to. For a long time, the salary of senior executives in the pharmaceutical manufacturing industry is a topic that many people keep talking about, and it is also a topic that some research institutions continue to pay close attention to. The field of medicine is a broad field to be developed, which has a very broad prospect. As far as the current situation in China is concerned, due to the main work of China's current development stage is to replicate products, the lack of scientific and technological innovation, resulting in the lack of international competitive advantage, the pharmaceutical industry is large but not strong. Management incentive is an incentive mechanism for enterprises to stimulate the work passion of management and to retain excellent managers(Cheng Kequn, Liu Wan & Jiang Xianqian, 2019). In-depth study of the performance of listed companies in the pharmaceutical industry can enable us to have an overall grasp of the current situation of the development of the whole industry, seek advantages and avoid disadvantages, seize opportunities, and fundamentally improve the current situation of enterprises in the pharmaceutical industry. it brings an

opportunity for the rapid development of the whole pharmaceutical industry. This paper chooses management incentive and enterprise performance to study, discusses the relationship between them, and analyzes whether management incentive in pharmaceutical manufacturing industry has an impact on enterprise performance improvement. and according to this influence, we can help enterprises to improve their own strength.

1.3 Objective of the study

Based on the analysis of listed companies in China's pharmaceutical manufacturing industry, this paper studies the relationship between management incentives and corporate performance.

a. Whether the equity incentive of the management of pharmaceutical manufacturing industry has an impact on enterprise performance.

b. Whether the management compensation incentive of pharmaceutical manufacturing industry has an impact on enterprise performance.

1.4 Scope of the study

By consulting relevant literature and combining human capital theory, stakeholder theory and principal-agent theory, it is concluded that there may be an influence relationship between management incentive and enterprise performance. equity incentive mechanism can mobilize the enthusiasm of managers and give full play to the potential of human capital by granting managers partial equity, so as to realize the strategic plan of the company and improve the ability of the enterprise. According to the literature and theoretical analysis of previous scholars, combined with the current situation of equity incentive system implemented by listed companies in Chinese pharmaceutical manufacturing industry and the situation of the stock market, a conclusion is drawn.

1.5 Research Significance

Through reading numerous references, it is found that there have been scholars constantly researching the relationship between management incentives and corporate performance of listed companies, but the research results are different, and there is less research on equity incentives in the pharmaceutical manufacturing industry. Therefore, this paper hopes to supplement the theoretical basis of the relationship between management incentives and corporate performance in the pharmaceutical manufacturing industry through this study, and provide some reference significance for future scholars' research.

In the process of enterprise operation, creating maximum corporate value is the key issue to be addressed by corporate governance theory(Tan Jinghui, 2019). This paper will take the management incentive of pharmaceutical manufacturing industry as the entry point to study what kind of management compensation system and equity incentive system can help improve the performance of enterprises, and make suggestions for listed companies to implement equity incentive in practice, which is of great practical significance for the long-term development of pharmaceutical manufacturing industry.

2. Literatures Review

2.1 Chinese pharmaceutical manufacturing industry

The pharmaceutical manufacturing industry is a knowledge-intensive, technology-intensive and capital-intensive industry with high investment, high returns and high risks (Sai Yunxiu & Wang Zixuan, 2021). Scientific and technological progress and the input of scientific research forces have become the nuclear power for the economic development of the pharmaceutical industry. Drug development from toxicological and pharmacological research, clinical trials, pilot production to industrial production, each step has to invest a lot of time, capital, manpower and so on, resulting in a long payback period of drug R & D investment. With the growth of economic level, people pay more attention to life and health, the total cost of medical and health is increasing, pharmaceutical enterprises are developing rapidly, and their profitability and profitability are increasing. As each new drug on the market, its best-selling cycle is generally only 3-5 years, and many pharmaceutical companies rely on one or two products, resulting in greater risk.

2.2 Management incentives

Management incentive is an incentive mechanism to motivate management and to retain good managers. Compared to foreign countries, China's management incentives are based on foreign management models, and the most common incentive mechanisms for management incentives are salary incentives and equity incentives.

Salary incentive refers to the salary, bonus, subsidy and other incentive means for the management to pay in monetary cash. Although there are many means of incentive to the management, the salary incentive is the most easily recognized and accepted by everyone. Equity incentive is that the shareholders grant part of the equity to the management staff, making them a part of the shareholders. They not only enjoy the residual distribution value of the company, but also bear the operational risk of the company. The mechanism of equity incentive effectively solves the contradiction of the separation of ownership and management in modern corporate governance, grants some benefits to the incentive object, makes their interests mutually beneficial, on the one hand, stimulates the enthusiasm of employees, on the other hand, it also helps to attract and retain high-quality employees, which plays a role in attracting, retaining and stimulating employees' creativity (Feng Genfu & Zhao Juehang, 2012). At the same time, the incentives of different models have different constraints. in order to obtain the benefits of equity incentives, managers will dutifully achieve the preset indicators of the enterprise and strive to improve the performance of the enterprise between the incentive exercise period. will not easily change jobs and quit, interlinked to make the operation of the company more smooth, the governance structure more perfect and stable.

2.3 Business performance

Enterprise performance refers to the operational efficiency and performance of the business operator during a certain period of operation. It is usually evaluated by corporate entities, and the focus of the evaluation is on the profitability, asset operation, solvency and business growth of the enterprise (Mi Xue and Feng Guozhong, 2019). Profitability is the most intuitive way to reflect the performance of an enterprise, and this

paper uses the return on total assets and return on net assets as representatives to study the performance of an enterprise.

2.4 Human capital theory

Human capital theory first came from research on economics. It was developed by the American economists Schultz and Becker in the 1960s and is of great representational importance. Human capital is the sum of all the capital contained in a person, such as the cost of education, on-the-job training and the opportunity cost of a company's employees. This is reflected in the total stock of production knowledge and job skills possessed by employees.

As corporate society continues to progress, human capital theory is gaining ground among enterprises. Managers of listed companies hold the management and decision-making power of the company, pursue the capital appreciation of the enterprise, and can provide human capital for the operation of the enterprise, which is an essential part of the development of the enterprise. The equity incentive mechanism allows managers to participate in the distribution of the residual benefits of the company by granting them part of the equity, which combines their rights and interests with their own power, fully mobilising their motivation and giving full play to the potential of human capital, thus realising the company's strategic plan, improving the performance of the company and enhancing the value of the company's existence.

2.5 Stakeholder theory

Stakeholders" was first introduced in 1984 with the publication of Freeman's book "Strategic Management: An Analytical Approach to Stakeholder Management", in which the theory of stakeholder management was clearly formulated. Stakeholder management theory refers to the management activities undertaken by a company's managers to balance the interests of various stakeholders in an integrated manner.

Stakeholder theory differs from the traditional shareholder-centred theory mainly in the following aspects: firstly, in terms of its target audience, stakeholders refer to all stakeholders who have a close relationship with the economic interests of the enterprise, including shareholders, management, investors, borrowers, etc. Secondly, in terms of governance objectives, the objective of stakeholder theory is to meet the needs of all stakeholders. Then, in terms of the decision-making model, stakeholders come together to contribute to the same goal and work together. Again. In terms of thinking logic, the stakeholder interest theory considers any issue and makes any decision before putting itself in the stakeholders' shoes. Finally, in terms of the way in which business performance is evaluated, stakeholder theory evaluates a wider range of issues and has a more diverse range of evaluation methods, such as from immediate to long term, and a combination of qualitative and quantitative methods.

2.6 Principal-agent theory

In most modern enterprises, ownership and management are separated, with shareholders holding shares

but not managing the enterprise. This gives rise to an agent, the manager, who serves the shareholders and the enterprise, and the two sign an agreement whereby the shareholders hand over the management of the enterprise, forming a principal-agent relationship. The owner of the company is seeking to maximise the value of its assets, but the manager of the company does not have the right to share in the residual income of the company, so the manager is seeking a model of low risk, long leisure time and high remuneration. At the same time, as corporate managers, they are more aware of the internal situation of the company than the shareholders, and if the manager, in order to make a profit in the short term, may use his day-to-day management of the company to influence the market price of the shares to make a profit, to the detriment of the shareholders. With conflicts of interest and information asymmetries, how to avoid ethical problems arising from the separation of powers is the first key issue to be addressed by principal agents.(Pan Jing & Wu Jizhong, 2022) .

The emergence of the equity incentive mechanism has effectively alleviated this problem by granting managers a portion of the stock interests, making them participate in the company's decision-making as shareholders, share the company's surplus value and bear the risks together with the company, combining the interests of the company with those of the managers, promoting the motivation of the managers, who will not compromise the long-term interests of the enterprise because of the short-term interests, and helping the enterprise This helps the company to develop in the long term (Dai Lu & Song Di, 2018) .

2.7 Past research

In recent years, there are more and more scholars studying management incentives. Regarding the relationship between management incentives and financial performance, most scholars believe that management incentives are positively related to financial performance, but some scholars have different opinions.

Different incentive methods have different effects on corporate performance, among which salary incentive can play a positive role (Xu Qiqi, Deng Kai & Jiang Cuiman, 2016). Some scholars take the complete compensation of the combination of executive compensation and equity incentives as explanatory variables, and find that executive compensation is positively related to corporate performance after an empirical analysis of the impact of executive compensation incentives on corporate performance (Yan, 2017). However, there is a significant positive correlation between the salary level of management team and business performance, and there is no obvious linear or negative correlation between executive compensation system and enterprise performance, but equity incentive system can improve performance (Zhou Yan, 2017).

Appropriate equity incentive can have a positive effect on financial performance, and there is no significant difference in financial performance between restricted stock and stock option. The enhancement of management equity incentive can reduce the double agency cost, so as to improve the operating performance of listed companies. The research views on the relationship between equity incentive and financial performance are different, and because the factors that affect the financial performance of enterprises in different industries are also different (Yi-Ning Ji, 2021). Management equity incentive can effectively solve the first kind of agency problem and play a positive regulatory role. Compared with state-owned enterprises and low-market-oriented areas, the regulatory effect of management incentive is more significant in private enterprises and high-market-

oriented areas (Liu, Yuanxiu & Liu & Chang, 2022).

There is a significant positive correlation between equity incentive intensity and corporate performance, while the number of shares granted at a single time does not affect the effect of equity incentive(Zhang, Ruijun, Li, Xiaorong & Xu, Nianxing, 2013). Due to the influence of salary control, the incentive effect of state-owned enterprises is not obvious, while private enterprises are in a relatively relaxed environment, and the performance of companies implementing equity incentive plan is more obvious than that before implementation. State-owned enterprises should further relax salary control and promote marketization in order to achieve the desired results through equity incentives(Chen Wenchuan & Qian Jingying, 2016). In competitive state-owned enterprises, executive compensation incentives can significantly promote corporate performance, while public service state-owned enterprises and specific functional state-owned enterprises have no significant incentive effect. Moreover, compared with non-state-owned enterprises, executive compensation incentives in competitive state-owned enterprises play a more important role in promoting corporate performance. In order to further improve the effectiveness of the salary incentive mechanism of state-owned enterprises, the government should gradually relax its control over competitive state-owned enterprises (Chen, Xia, Ma, Lianfu & Ding, Zensong, 2017). There is a positive correlation between executive compensation and corporate performance; equity concentration positively promotes corporate performance; compared with non-state-owned enterprises, the positive correlation between executive compensation and corporate performance in state-owned enterprises is more obvious; as for the degree of equity concentration, the equity concentration of non-state-owned enterprises has a stronger positive effect on corporate performance (Jiang Zefang & Chen Zuying, 2019).The innovation performance and operation performance of high-tech enterprises are positively related to the scale of manpower, investment and capital scale of science and technology activities, but negatively related to the asset-liability ratio (Zhong Dongting and Ren Hao, 2021).There is a negative correlation between the shareholding ratio of the largest shareholders and the enterprise value. When the management incentive is used as a regulatory variable, the shareholding ratio of the top five shareholders has a more significant impact on the enterprise value (Zhang Jiayi, 2022).

In summary, the relationship between compensation incentives and equity incentives in management incentives on corporate performance has been much researched and analysed by scholars from all walks of life and has been argued to be of some relevance. The relationship between equity incentives and financial performance is still a matter of academic opinion, with less empirical analysis in specific industries, and the factors affecting corporate performance vary from industry to industry due to the wide variation in industries. By reading the research literature, we can find that due to the different research backgrounds, choice of variables and methods of analysis, scholars have not reached a consistent conclusion on the relationship between equity incentives and corporate performance, and they have different arguments on the effect of implementing equity incentives on corporate performance. With the gradual development and expansion of China's capital market, the governance structure of listed companies is also being strengthened and improved.

Therefore, based on the current situation of the implementation of the equity incentive system and the stock market condition of listed companies in the pharmaceutical manufacturing industry in China, this paper

selects total return on assets and return on net assets as the dependent variables to refer to corporate performance, management equity incentive and compensation incentive as the independent variables to refer to management incentive, and the independent variables of financial leverage, corporate asset size, equity concentration, corporate growth and corporate nature to The study was enriched to examine listed companies in the pharmaceutical manufacturing industry in the hope of discovering the relationship between management incentives and corporate performance of listed companies in the pharmaceutical manufacturing industry.

3. Finding and Conclusion

By reading a large number of references, we found that equity incentives in China have developed rapidly since the share reform, but they started late compared to Western countries, and the relevant theoretical foundation is also weak and needs to be further developed by us.

The implementation of equity incentive plays a positive role in improving enterprise performance, no matter in high-tech manufacturing or traditional manufacturing, the implementation of equity incentive can improve enterprise performance, and with the increase of senior executives' shareholding ratio, the stronger the effect on enterprise performance (Zang Qi, 2017). After senior executives get equity incentives, the company's performance will be improved (Xu Xiaopeng, 2017). The implementation of equity incentive for R & D technical personnel can significantly promote the long-term and short-term performance of enterprises (Pan Yingying, 2017). According to the stakeholder theory, if a certain percentage of the shareholding of the management is rewarded for achieving the development goals of the enterprise, then the management will be responsible for the welfare of the enterprise in order to obtain that part of the reward. The other is that the management does not achieve the development goals of the company and does not receive that portion of the equity allocation incentive. This leads to hypothesis1.

Hypothesis 1: There is a positive relationship between equity incentives and firm performance in the pharmaceutical manufacturing industry.

From primitive barter to the emergence and development of money, businessmen have become increasingly concerned with the interests of their employees as they pursue profit. It can be argued that from the original barter to the emergence and development of money, businessmen have become more and more attentive to the interests of their employees in the pursuit of profit. Of all the material demands placed on employees, monetary remuneration is always the most striking. There are many ways in which a company can attract, retain and motivate employees, but monetary remuneration is the most basic. For an employee, there are many options available to him, and once he has decided to pursue a career, I am afraid that monetary remuneration is one of the things that will attract him.

From the domestic research in recent years, there is a positive correlation between executive compensation incentives and corporate performance. There is a positive correlation between executive compensation and performance. The higher the executive compensation, the better the enterprise performance. (Ming Ru-Cheng, 2022). According to the human capital theory, stakeholder theory and principal-agent theory mentioned in the previous section, it can be concluded that the listed companies can help to improve the motivation of the staff by providing equity incentives to the management of the companies, so that their two interests can be combined, which effectively reduces the principal-agent cost and is conducive to the long-term development of the companies. With the continuous improvement of China's policy on equity incentive system, the benefits of equity incentive to enterprises will be higher and will have a greater impact on enterprise performance. This leads to hypothesis2.

Hypothesis 2: There is a positive relationship between management compensation and corporate performance in the pharmaceutical manufacturing industry

Whether it is western scholars or domestic scholars, they have conducted a number of relevant studies on corporate performance. Most of their studies on corporate performance take the business operator as the starting point, and the performance of the business operator is used to evaluate and measure the level of corporate performance. In this paper, the evaluation of corporate performance is mainly based on the profitability of enterprises, represented by the net return on total assets (ROA) and return on net assets (ROE), which represent profitability, with net return on total assets equal to net profit divided by the average balance of total assets and return on net assets equal to net profit divided by the average balance of shareholders' equity. Both of these indicators are often used as important indicators of the level of performance of a company, and the greater the ratio of these two indicators, the better the performance of the company.

Management incentives were mainly selected to study the proportion of management equity incentives and management remuneration as indicators. Management equity incentive (MRS) is the ratio of the number of incentive shares to the total number of shares granted to the incentive recipients by the company. If the incentive ratio is low, the incentive recipient can receive a portion of the incentive income without much effort, which is merely a benefit while the equity incentive fails to serve as an incentive. If the incentive ratio is high, it is beneficial for the incentive recipient to actively work hard to run the business and improve the performance of the company, and the more you give the more you get in return. In addition, the management compensation incentive (WAGE), financial leverage (LEVER), enterprise asset size (SIZE), equity concentration (BLOCK), enterprise growth (GROWTH), enterprise nature (NATURE) are selected to enrich the research content.

Table 3.1 Definition of variables

Variable type	Variable name	Variable Codes	Definition
Dependent variable	Net return on total assets	ROA	Net profit/total asset balance
	Return on net assets	ROE	Net profit/average balance of shareholders' equity
Independent variable	Management Equity Incentives	MRS	Total shareholding of senior management Volume / Total number of shares in the company * 100%
	Management Compensation Incentives	WAGE	Natural logarithm of top three management remuneration
	Financial leverage	LEVER	Gearing ratio = total business liabilities / total business assets
	Size of business assets	SIZE	Total business assets as natural logarithm
	Concentration of shareholding	BLOCK	Percentage of shareholding of the largest shareholder
	Business Growth	GROWTH	Operating income growth rate = (current period's turnover - previous period's turnover) / previous period's turnover x 100%
	Nature of business	NATURE	State-owned enterprises take 1, non-state-owned enterprises take 0

Based on the research hypothesis, the model design for the variables of interest was carried out as follows.

$$ROA_{i,t} = \alpha + \alpha_1 MRS_{i,t} + \alpha_2 WAGE_{i,t} + \alpha_3 LEVER_{i,t} + \alpha_4 SIZE + \alpha_5 BLOCK_{i,t} + \alpha_6 GROWTH_{i,t} + \alpha_7 NATURE_{i,t} + \varepsilon \quad \text{(Model 1)}$$

$$ROE_{i,t} = \alpha + \alpha_1 MRS_{i,t} + \alpha_2 WAGE_{i,t} + \alpha_3 LEVER_{i,t} + \alpha_4 SIZE + \alpha_5 BLOCK_{i,t} + \alpha_6 GROWTH_{i,t} + \alpha_7 NATURE_{i,t} + \varepsilon \quad \text{(Model 2)}$$

Where ROA is total net asset margin; ROE is return on net assets; WAGE is management compensation; MS is the number of management shares; LEVER is financial leverage; SIZE is firm asset size; BLOCK is equity

concentration; GROWTH is firm growth; and is the nature of the firm; i is the i-th firm; t is the t-th year. is the constant term; and is the random error.

It can be seen from Table 3.2 that the minimum value of management compensation incentive (WAGE) is 12.922, the maximum value is 17.59, and the median is 14.695, and there is no significant difference between the maximum value and the minimum value, which shows that there is little difference in the level of management compensation in pharmaceutical manufacturing enterprises. Financial leverage (LEVER), that is, the minimum value of asset-liability ratio is 0.014, the maximum value is 0.817, and the average value is 0.307, indicating that the asset-liability ratio of the industry is generally low, but within a reasonable range. Enterprise size (SIZE) takes the natural logarithm of the total assets of the enterprise, its minimum value is 20.123, the maximum value is 25.259 yuan, and the median is 22.047. Generally speaking, there are most small enterprises in the industry. The minimum value of ownership concentration (BLOCK) is 4.71and the maximum is 69.16,the mean is 32.191 and the median is 30.95. the maximum value is about 15 times of the minimum value. This shows that the non-tradable share structure in this industry has not formed a unified standard, and the degree of equity concentration is low. Enterprise growth (GROWTH), that is, the minimum growth rate of business income is-0.597, the maximum is 7.112 yuan, and the average value is 0.168. There is a large gap between the maximum and the minimum growth rate of business income. In the nature of enterprise (NATURE), the assignment value of state-owned enterprises is 1, and that of non-state-owned enterprises is 0, with an average of 0.088. Judging from the average value of the selected samples, the number of non-state-owned enterprises in this industry is relatively small.

Table 3.2 Descriptive statistics

Name	Sample size	Minimum value	Maximum value	Average	Standard deviation	Median
ROA	760	-0.662	0.478	0.066	0.082	0.061
ROE	760	-1.277	0.788	0.089	0.133	0.092
MSR	760	0	73.56	10.624	15.248	2.145
WAGE	760	12.922	17.59	14.753	0.693	14.695
LEVER	760	0.014	0.817	0.307	0.158	0.285
SIZE	760	20.123	25.259	22.084	0.973	22.047
BLOCK	760	4.71	69.16	32.191	11.768	30.95
GROWTH	760	-0.597	7.112	0.168	0.418	0.12
NATURE	760	0	1	0.088	0.284	0

Table 3.2 shows that most of the independent variables are related to the dependent variable. The correlation analysis was used to investigate the correlation between ROA and the seven items MSR, WAGE, LEVER, SIZE, BLOCK, GROWTH and NATURE. The overall analysis showed that the correlation coefficients between MSR, WAGE, LEVER, BLOCK and GROWTH showed significant values.

Table 3.3 Correlation analysis (ROA)

		ROA	MSR	WAGE	LEVER	SIZE	BLOCK	GROWTH	NATURE
ROA	Correlation coefficient	1							
MSR	Correlation coefficient	0.203**	1						
WAGE	Correlation coefficient	0.159**	-0.260**	1					

LEVER	Correlation coefficient	-0.377**	-0.056	0.027	1				
SIZE	Correlation coefficient	0.014	-0.291**	0.557**	0.308**	1			
BLOCK	Correlation coefficient	0.205**	0.137**	-0.101**	-0.112**	-0.061	1		
GROWTH	Correlation coefficient	0.332**	0.195**	0.027	-0.011	0.026	0.043	1	
NATURE	Correlation coefficient	0.009	-0.106**	0.113**	0.082*	0.153**	-0.018	0.006	1

* p<0.05 ** p<0.01

Table 3. 3 shows that MSR, salary, size, location and growth have a significant positive impact on ROA, leverage has a significant negative impact on ROA, while nature has no significant impact on ROA. This shows that the return on net assets increases with the increase of management shareholding and management compensation, and management equity incentive and compensation incentive will have a positive impact on corporate performance, which verifies the validity of hypothesis 1 and 2.

In addition, corporate performance is significantly negatively correlated with financial leverage, positively correlated with equity concentration and corporate growth, and the impact of corporate nature on corporate performance is not significant.

Table 3.4 Analysis of linear regression results (ROA)

	Non-standardised coefficients		Standardisation factor	t	p	VIF
	B	Standard error	Beta			
Constants	-0.39	0.067	-	-5.821	0.000**	-
MSR	0.001	0	0.18	5.558	0.000**	1.183
WAGE	0.021	0.004	0.173	4.687	0.000**	1.539
LEVER	-0.199	0.017	-0.38	-11.822	0.000**	1.163
SIZE	0.007	0.003	0.085	2.174	0.030*	1.731
BLOCK	0.001	0	0.149	4.91	0.000**	1.039
GROWTH	0.055	0.006	0.279	9.134	0.000**	1.05
NATURE	0.008	0.009	0.028	0.921	0.357	1.031

Dependent variable: ROA

* p<0.05 ** p<0.01

Table 3.5 Model summary (ROA)

R	R 2	Adjustment R 2	Model error RMSE	DW value
0.759	0.576	0.568	0.067	1.407

Table3.6 ANOVA tables (ROA)

	Square and	df	Mean Square	F	p-value
Return to	1.714	7	0.245	53.399	0
Residuals	3.448	752	0.005		
Total	5.161	759			

As can be seen from Table 3.5, the R value of the model is 0.576, which means that MSR, WAGE, LEVER, SIZE, BLOCK, GROWTH, and NATURE can explain 57.6% of the changes in ROA. As can be seen from Table 3.6, when the model is tested by F test, it is found that the model has passed the F test (Franch 53.399 and 0.000 < 0.05), which shows that the

construction of the model is meaningful.

This paper chooses return on net assets (ROE) instead of return on total assets (ROA) for robustness test, as shown in figures 3.7,3.8,3.9,3.10. Through the correlation analysis and linear regression analysis of the samples taken, we can see that there is a significant positive correlation between management equity incentive (MSR), compensation incentive (WAGE) and return on net assets (ROE). This shows that the greater the intensity of management compensation incentive and equity incentive, the better the enterprise performance, which verifies the correctness of H1 and H2.

Table 3.7 Correlation analysis (ROE)

		ROE	MSR	WAGE	LEVER	SIZE	BLOCK	GROWTH	NATURE
ROE	Correlation coefficient	1							
MSR	Correlation coefficient	0.193**	1						
WAGE	Correlation coefficient	0.152**	-0.260**	1					
LEVER	Correlation coefficient	-0.275**	-0.056	0.027	1				
SIZE	Correlation coefficient	0.062	-0.291**	0.557**	0.308**	1			
BLOCK	Correlation coefficient	0.202**	0.137**	-0.101**	-0.112**	-0.061	1		
GROWTH	Correlation coefficient	0.330**	0.195**	0.027	-0.011	0.026	0.043	1	
NATURE	Correlation coefficient	0.028	-0.106**	0.113**	0.082*	0.153**	-0.018	0.006	1

* p<0.05 ** p<0.01

Table 3.8 Analysis of linear regression results (ROE)

	Non-standardised coefficients		Standardisation factor	t	p	VIF
	B	Standard error	Beta			
Constants	-0.692	0.113	-	-6.097	0.000**	-
MSR	0.002	0	0.177	5.212	0.000**	1.183
WAGE	0.027	0.007	0.143	3.694	0.000**	1.539
LEVER	-0.243	0.028	-0.288	-8.561	0.000**	1.163
SIZE	0.016	0.006	0.119	2.905	0.004**	1.731
BLOCK	0.002	0	0.156	4.894	0.000**	1.039
GROWTH	0.089	0.01	0.279	8.706	0.000**	1.05
NATURE	0.017	0.015	0.037	1.168	0.243	1.031

Dependent variable: ROE

* p<0.05 ** p<0.01

Table 3.9 Model summary (ROE)

R	R 2	Adjustment R 2	Model error RMSE	DW value
0.719	0.517	0.506	0.114	1.497

Table 3.10 ANOVA table (ROE)

	Square and	df	Mean Square	F	p-value
Return to	3.592	7	0.513	39.117	0
Residuals	9.864	752	0.013		
Total	13.455	759			

Therefore, it is concluded that management equity incentive and salary incentive in pharmaceutical manufacturing industry have a positive impact on enterprise performance, and then it is concluded that management incentive has a positive impact on enterprise performance.

4. Recommendation

Based on the findings of this paper, the following four recommendations are made.

First, Develop a reasonable management incentive package. From the results of this paper's argument, there is a significant positive correlation between management incentives and corporate performance, further arguing that improving the remuneration package of management in the pharmaceutical manufacturing industry and implementing appropriate equity incentives will help improve corporate performance. Under the continuous opening of the market economy and in the face of the continuous innovation of talent strategy, enterprises must pay attention to the reform of the management compensation system and implement equity incentives for the management, so as to closely link the personal interests of the management with the interests of the enterprise and share the benefits and risks(Li Chunling & Nie Jjingsi, 2018). In addition, listed companies in the pharmaceutical manufacturing industry should further improve the disclosure of remuneration and equity in the pharmaceutical manufacturing industry while focusing on the implementation of appropriate remuneration incentives and equity incentives for the management. On the one hand, it can give the employees of the enterprise psychological comfort and understand the gap between themselves and the management, especially the middle and low level managers, which can inspire them to work hard; on the other hand, it can let the enterprises in the same industry understand the market situation of the management, which can also strengthen the monitoring power of the society. On the other hand, it allows companies in the same industry to understand the market situation of the management, which in effect also strengthens the supervision of all sectors of society, thus helping to avoid blindly poaching each other with high salaries, causing chaos in the market.

Second, Rational use of a firm's financial leverage. The pharmaceutical manufacturing industry is characterised by long research and development cycles, high risks and largely uncontrollable costs, and the excessive use of free capital during the research and development phase of a drug and the risk of failure. Most of the small and medium-sized enterprises in the industry are not listed, and their sources of funding are divided into their own funds and debt funds. Debt operations not only increase cash flow in the course of business, but also enable the enterprise to obtain an additional portion of revenue, while the enterprise's right to operate is not threatened and tax savings can be achieved (Jiang Hua, 2021). The temptation is to increase the debt ratio of some companies. In fact, excessive debt can make investors reduce their investment in the company for the safety of their own capital, and high debt also requires high interest payments, which is risky, so the financial leverage of the company should be used wisely.

Third, Reasonable adjustment of the degree of equity concentration of a firm. This paper argues that equity concentration is positively correlated with corporate performance, which suggests that a high degree of equity concentration will have a beneficial effect on corporate performance. In a company with a decentralised shareholding, control is shared among several major shareholders, which can effectively curb the possible infringement of the interests of the listed company by the major shareholder's behaviour of "using the public for personal gain" and make the company's decision-making more democratic. However, the fragmentation of decision-making power will lead to a reduction in the efficiency of decision-making and a reduction in the relevance of the interests of the company and its shareholders, which will discourage them from participating in

the company's affairs, and the conflicts between the major shareholders within the board of directors will easily lead to conflicts and affect the stable operation of the company. In addition, excessive concentration of equity also affects the interests of the management, who will not consider the long-term development of the company for their own short-term interests, weakening the expenditure on innovation capacity and affecting the long-term development of the company(Xiao, Shufang, Jin Tian & Liu Yang 2012). Therefore, the degree of equity concentration should be reasonably adjusted to the characteristics of the company itself, and should not be too low or too high.

Fourth, Reasonable formulation of performance assessment index system. Pay attention to the long-term development of the enterprise, the growth of enterprise development determines the length of the enterprise life cycle, the pharmaceutical manufacturing industry has a strong anti-cyclical ability, once the new drug development is successful, it will bring long-term stable income, therefore, we should determine the goal of sustainable development of the enterprise (Zhou Hongxia, 2020). While attaching importance to the positive impact of management incentives on corporate performance, management incentives should be appropriately carried out according to the actual situation of the company. When formulating the performance appraisal index system, the ratio of shareholders' shareholding, the remuneration needs of management and employees, and the long-term development of the enterprise should be comprehensively considered, and a scientific and reasonable corporate performance appraisal index system should be formulated.

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