

St. Petersburg State University  
Graduate School of Management  
Master in Management

OWNERSHIP STRUCTURE AND CROSS-BORDER M&A PERFORMANCE: THE  
STUDY OF CHINESE COMPANIES

Master's Thesis by the 2nd year student  
Concentration — MIM  
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**ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ  
ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ**

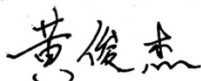
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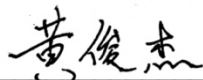
I, Huang Junjie, second year master student, program «Management», state that my master thesis on the topic

“Ownership structure and cross-border M&A performance: the study of Chinese companies”,

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# 1. Introduction

The global trade has gone more profound, and the international economic institution has primarily improved in the period of a digital revolution since technologies have experienced a rather rapid development. Cross-border mergers and acquisitions (Mergers & Acquisitions, M&A) have already become a popular and valuable model for enterprises to penetrate foreign markets nowadays. With regards to keeping the sustainable competitive position, which is considered as the main target for modern companies, M&A is the one of the most important strategies for companies to realise this aim (González-Torres, et al., 2020). After the new millennium with the rapid development of Chinese economy, cross-border M&A transactions conducted by Chinese companies have surged to a huge number and caught the world's attention.

The cross-border M&A performance of a company is impacted by different internal and external factors. The topic of the impact of the factors on cross-border M&A performance is still fresh and studied by the academics worldwide. Especially, the impact of corporate governance on cross-border M&A performance in the Chinese context is one of the most popular research topics for the corporate study.

Therefore, the goal of the study in this paper is to investigate the impact of ownership structure on cross-border M&A performance of Chinese companies. Then, this paper focuses on the research about the impact of the degree of restriction on the controlling right/power of the largest shareholder by the other large shareholders, the degree of ownership concentration, the executive ownership, and the equity nature of the companies on cross-border M&A performance of Chinese companies from the perspective of corporate governance. Based on the four variables mentioned earlier, this paper will conduct an empirical analysis and hopes to acquire detailed results about to what extent the cross-border M&A performance is impacted by these four variables and the inner governance mechanism.

The methodology of this paper is to collect and analyse the literature on cross-border M&A performance, the literature on the ownership of the largest shareholder and cross-border M&A performance, on the ownership concentration and cross-border M&A performance, on the executive ownership and cross-border M&A performance, and on the equity nature (status of SOE and POE of Chinese companies) and cross-border M&A performance. The paper

summarised the basic theories in this section and then derived five hypotheses according to the theoretical analysis in the later section.

Based on the literature reviews, the data models are to be established and the empirical test is used for testing the 5 hypotheses. This paper establishes the cross-border M&A performance model by applying the factor analysis on the selected financial ratios from China Stock Market & Accounting Research database (CSMAR), then to design the empirical model and test the relationships between the ratio of the sum of shareholdings of the 2<sup>nd</sup> and 3<sup>rd</sup> large shareholders to the shareholding of the largest shareholder and cross-border M&A performance, between ownership concentration and cross-border M&A performance, between executive ownership (rate of executive shares) and cross-border M&A performance, and between equity nature (status of SOE and POE) and cross-border M&A performance. According to the result of the empirical analysis, the paper gives the insights and provides effective and reasonable suggestions for both Chinese companies and government.

In this paper, the research on the key factors impacting the cross-border M&A performance of Chinese companies is aiming to provide the theoretical foundation and the empirical practice for future research. Firstly, both Chinese and foreign researchers have studied and analysed cross-border performance from different perspectives and through different theoretical bases. The influence upon the countries where the underlying sides in the cross-border M&A transactions are located, the motives for cross-border M&A, and the cross-border M&A performance are the three hot topics for the research in the M&A sector. The research on the influence upon the countries where the underlying sides in the cross-border M&A activities are located, and the motives for cross-border M&A have been very mature and achieved fruitful results. As for the M&A performance, it is a topic that is still relatively fresh in comparison to other two topics and worthy of being explored deeper. Therefore, this paper starts the research on the cross-border M&A of Chinese companies from the general perspective of ownership structure and then explicitly and deeply discuss it in more specific and detailed sectors. Secondly, the paper hopes to achieve practical results, which could benefit the Chinese companies preparing for the cross-border M&A and support them make scientific and reasonable decisions from the perspective of corporate governance. From the broad sense, the paper hopes that the practical foundation and empirical practice would provide a valuable and efficient guide for the Chinese government while conducting the more profound reform upon

the system of corporate ownership structure for enhancing the development of market economy at the new stage.

The paper has the following structure:

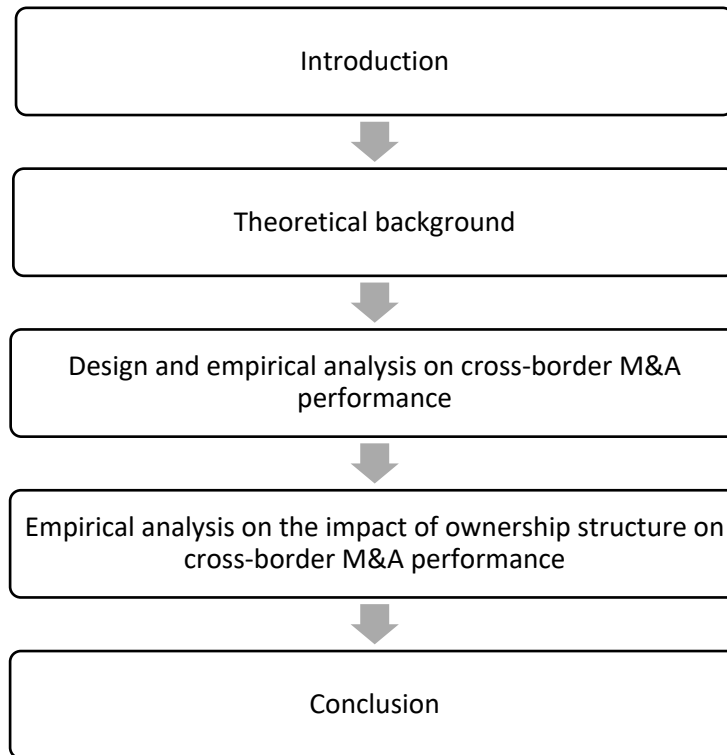
First chapter, introduction. In this section, the paper has introduced the research background and the research goal, and then introduced the basic research methodology and the basic research thinking.

Second chapter, theoretical background. In this section, the paper elaborated the research background and pointed out the possible creativity of the study in this paper. Then, the paper analysed the former studies and has summarised the conclusions of the predecessors and clarified the concepts and theories about cross-border M&A, the evaluation methods on cross-border M&A performance, and ownership structure in this part. Based on the opinions, analyses and conclusions from the former studies, the paper proposed five hypotheses.

Third chapter, evaluation model design and the analysis on cross-border M&A performance. The paper designed a comprehensive evaluation system on cross-border M&A performance and then has conducted factor analysis. Then, the paper calculated the comprehensive performance scores of cross-border M&As and has analysed the figures based on the model.

Fourth chapter, empirical testing and the analysis on the impact of ownership structure to cross-border M&A performance. In this section, the paper conducted the regression analysis based on the selected variables and analysed the result. Then, to give the managerial and policy implications based on the analysis of the empirical result.

Fifth chapter, conclusion. In the final section, the paper has drawn a conclusion covering the research topic based on the result of empirical study.



## 2. Theoretical background

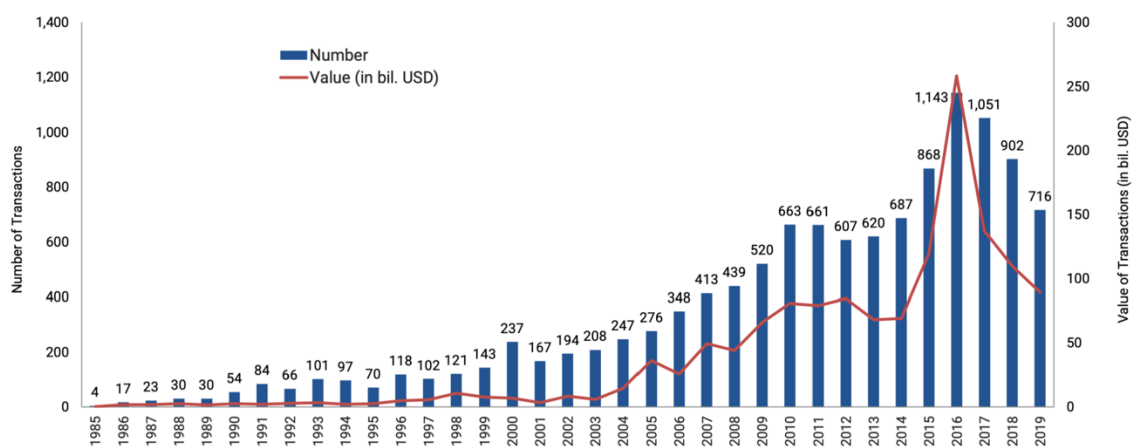
### 2.1 Research background

Over the last few decades, most of the growth in outbound investment is achieved by cross-border mergers and acquisitions (M&A). The implementation of cross-border mergers and acquisitions (M&A) is always considered as one of the most critical strategic decisions for companies to enhance the corporate competitive advantages, expand the overseas markets, achieve growth, and gain the market shares, protect the resources, acquire the strategic resources, or improve the corporate efficiency in the rather competitive business environment nowadays. Adopting cross-border mergers and acquisitions is also one of the most meaningful ways to protect companies and enhance corporate capabilities in a rapidly changing business environment.

Zhou, et al. (2016) have pointed out in their paper that the rapid growth of emerging markets has not only made them become the main and hot places for global expansion of the major



developed economies, but more and more companies from emerging economies are also expanding their overseas business. Since the 1990s, foreign direct investment (FDI) from emerging economies has surged to an extremely high level and has become a rather important impetus for global economic growth (Yang & Deng, 2015). In the past decade, the global expansion of emerging economies has almost caught up with the pace at which advanced economies entered the emerging markets. According to the Handbook of Statistics 2020 issued by the United Nations Conference on Trade and Development (UNCTAD), China can still be considered as the largest attracting foreign investment country among the emerging economies. Based on the Chinese M&A market report 2020 from Daxue Consulting, Chinese outbound M&A activities have experienced a quick increase until 2016. Although the numbers and values of M&A have slumped after the U.S. President Donald Trump came into power, they remained at a high level, which has well reflected the vitality of Chinese companies in the outbound M&A market in the context of “Trade War” between China and the U.S. Therefore, the cross-border M&A of Chinese enterprises continue to attract the attention of the scholars and academia.



**Figure 1, M&A from China to abroad (Outbound) (Including Hongkong)**

There is no doubt that the enthusiasm of Chinese enterprises to participate in M&A activities is relatively high, but the completion rate of cross-border M&A is only 67%, which is much lower than that of developed countries (Willers et al., 2015). In terms of generating profit, most M&A companies have negative post-merger gains. Some scholars have already clearly pointed out that about 50% of successful transactions have not realised gains, and this rate may reach 70 to 90% (Breuer, Ahmad, & Salzman, 2018). Therefore, the topic of M&A performance of Chinese enterprises is already really concerned by many Chinese researchers. Liu, et al. (2017) studied the impact of political connections on M&A performance in Chinese

market by Chinese listed firms. They found out that political connections have a negative effect on value in state-owned enterprises (SOEs) but have a positive effect on value in private-owned enterprises (POEs). Gao, et al. (2019) have investigated the relationship between political connections and M&A performance in Chinese market from the perspective of Chinese family firms. They found out that family firms are more likely to have higher domestic M&A performance if they have political connections. Ma, et al. (2016) investigated how state ownership affects the post-M&A performance of Chinese firms in the Chinese domestic market. They have found that Chinese SOEs have larger long-term performance improvement after the M&A deals in comparison to the Chinese POEs. In order to study Chinese M&A topic further and not be confined to the Chinese domestic market, this paper will focus on the cross-border M&A transactions launched by Chinese companies.

As a fundamental and essential aspect of corporate operations, corporate governance is one of the main factors having the impact on M&A performance. The level of governance structure directly influences whether the company can make scientific and reasonable M&A decisions. As an essential part of the corporate governance field, the ownership structure determines the company's governance behaviour, influences the company's governance efficiency, and further impacts the company's business activities and performance. Since most Chinese listed companies originate from the restructuring of state-owned enterprises (SOEs), Chinese SOEs still have a strong influence in the Chinese capital market. The high degree of ownership concentration was a typical feature of Chinese SOE's ownership structure before Chinese corporate reform. The state-owned shares and the ownership concentration still deeply influence the Chinese companies (both SOEs and POEs) in the Chinese capital market. Additionally, the feature of high ownership concentration directly affects the company's ability to make scientific and reasonable M&A decisions, and it is also highly related to the M&A performance of Chinese listed companies. Therefore, studying the impact of ownership structure on the M&A is of great significance for the deep and comprehensive understanding of cross-border M&A transactions of Chinese listed companies. This paper will discuss the impact of ownership structure on cross-border M&A performance of Chinese companies from the perspective of corporate governance.

## 2.2 Innovation point

In the former studies about the impact of ownership structure on M&A performance, companies or acquirers from the developed markets are the first target for researchers. Song, Zheng and Zhou (2021) has analysed the impacts of opaqueness and the level of information asymmetry to M&A performance in the developed market. Moeini, Nair, and Chen (2020) found out that US companies have better M&A performance in terms of capital market reaction while they have the superior digital readiness to target companies. Since the Belt and Road Initiative (BRI) started and has a huge development, the Chinese government provides more policy supports for cross-border trade and commerce (Du, 2021). Therefore, more and more scholars begin to study the M&A topic from the perspectives of Chinese companies in terms of the developing market. But a lot of Chinese researchers only systematically researched on this topic in terms of Chinese domestic market. Although there are some Chinese and western researchers studied the M&A topic and analysed the impacts on the cross-border performance of Chinese companies, they mainly focused on the impacts caused by the industry difference, motives for cross-border M&A transactions, political connection, and so on. Very few researchers studied the impact from the ownership structure and evaluated the cross-border M&A performance either through the event study method, or through the single indicator evaluation method and by selecting the samples which performed cross-border M&As in a certain year (for example, all M&A samples in 2014). So, their studies either analysed the short-term cross-border M&A performance of Chinese companies or didn't comprehensively analysed the cross-border M&A performance of Chinese companies. Their results of the impacts on M&A performance don't well reflect the comprehensive situation of the cross-border M&A performance of Chinese companies. Hence, this paper analyses the impacts from the ownership structure perspective using a more comprehensive method from the perspective of Chinese acquirers. The next section is to elaborate the different approaches for measuring the M&A performance and justify the innovation point of this paper.

## 2.3 M&A performance and its evaluation method

### 2.3.1 M&A performance

M&A performance is about the benefits to companies brought about by the companies' mergers and acquisitions activities. The companies' cross-border M&A performance can be analysed from two perspectives, macro-perspective and micro-perspective.

From the macro-perspective, cross-border M&A activities can help a company with technological innovation, finance cost reduction, and enhance its capability against the risks. Furthermore, cross-border M&A activities can bring benefits to the national macro-economy, such as promoting the domestic industrial structure upgrade and optimising the resources allocation worldwide.

From the micro-perspective, M&A activities can bring changes to both the company and shareholders. Therefore, the analysis of the cross-border M&A performance mainly focuses on the company and shareholders. The main groups of the stakeholders influenced by the changed from the M&A activities are company owners, executives, and creditors. The changes in the companies are including operating efficiency, asset structure, financial structure, etc.

In this paper, cross-border M&A performance of the companies is analysed from the micro-perspectives, focusing on Chinese SOEs and POEs.

### 2.3.2 Evaluation methods

The first method is the accounting-based measures. The accounting-based measures is to test M&A performance by analysing financial indicators before and after M&A activities. The accounting-based measures can be subdivided into the single indicator evaluation approach and the comprehensive evaluation approach. The selection of the approach depends on the number of the selected financial indicators.

The single indicator evaluation approach uses only one indicator to measure the company's financial performance. The financial ratios, such as "Return on Assets" (ROA), "Earnings per Share" (EPS), etc., are the most used indicators. Li, Wang, et al. (2020) has selected ROA as the indicator in their research and has pointed out the effects of institutional on companies' cross-border M&A performance in the short term and in the long term. Jin, Xu, et al. (2020) has applied ROA as the only indicator of company's M&A performance in the research and examined that the venture capital institutions have strong positive effects on listed companies' M&A performance if the institutions have the strong information resource acquisition ability or high participate in the M&A process. Prasadh, Thenmozhi, and Hu (2020) have used ROA in their paper as the sole indicator reflecting the performance of cross-border acquisitions and they found out that the long-term post-acquisition performance is affected by the economic

freedom distance. In general, the most advantage of this method is simple calculation. But only one indicator can't reflect the comprehensive performance of a company.

The comprehensive evaluation approach is to select some financial data from the financial statements and then to organize them as indicators for the financial performance study. By conducting the factor analysis (SPSS used in this paper), these indicators are converted into the comprehensive scores which can well reflect the entire M&A performance of the companies. Professor Fukuda Akira (2020) has applied several financial ratios in his paper for the performance post M&A deals in Japan and they are ROA, ROE, operating CF total assets ratio, free CF assets ratio, equity total assets ratio, Tobin's q, stock price volatility, etc. In another paper, Hanelt, et al. (2020) has used market-to-book ratio (Unotila et al., 2009; etc.), return on assets (He & Huang, 2011; etc.), and earnings per share (EPS) as the indicators to measure different types of performance. They pointed out that digital innovation has positive effects on firm's performance. Kar, et al. (2020) has analysed the role of M&As on corporate performance from the perspective of Indian IT companies by applying four performance indicators, normalised EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization), ROCE (Return on Capital Employed), RONW (Return on Net Worth), and normalised revenue. Yang and Ai (2021) measured the profitability of Chinese high-tech companies post-M&A deals based on ROA (Return on Assets) and ROS (Return on Sales). In general, the comprehensive evaluation approach takes different factors into consideration while measuring the company's financial performance. Therefore, this approach can more concretely reflect the company's cross-border M&A performance in comparison to the single indicator evaluation approach.

The second method is the event study. The event study method is an empirical study method that studies the impact of the occurrence of some events on the selected variables. This method is very popular in analysing the M&A performance. Xiao, Yang, and Li (2020) have analysed the short-term M&A performance of Chinese firms by the evidence from 2006 to 2019 based on the event study. Liu, Luo, and Tian (2017) studied the impacts from political connections on the M&A performance of Chinese companies by the evidence from 2005 to 2011 based on the CARs of the event study. Gao, Huang, and Yang (2019) examined the M&A performance in Chinese domestic market from the perspective of Chinese family firms based on the event study. In the research of M&A performance, the event is the announcement of a M&A activity. The variables to be analysed are the average abnormal return and cumulative average abnormal

return. The procedure is that an event window is determined for the research at first. There is no unified standard for the length of the event window. The event window applied by most studies is (-20,20). The longer the period is, the more it can reflect the impact on the M&A performance, but other variables may also have the influence on the M&A performance and the analysis result may not accurate due to the unknown interference factors. Then, the daily expected returns of each company are to be calculated based on three methods, market model (MM), market adjusted model (MMA), and the constant mean return model (COMEAN) (MacKinlay 1997; Kaspereit 2020). If a company didn't have an M&A event during this period, then the returns that the company had at this time is the expected returns. After this, by calculating the difference between the company's daily actual return and the expected return, the result of the difference is the abnormal return of the company. Then, calculate the average of the abnormal returns of all sample companies in all event windows. At last, calculate the cumulated average abnormal return (CAR), if CAP is larger than 0, then it means that the M&A event has brought abnormal returns to companies, if CAP is smaller than 0, then it means that companies has suffered the loss.

The premise of using the event study method is the effectiveness of the capital market. In China, the stock market is still rather immature, and stock price of a company may fluctuate drastically due to the various external factors (such as secret deal, black case work, etc.). Therefore, during the M&A announcement period, the change in stock prices can not accurately reflect the impact from the M&A event. Additionally, the short length of the event window only provides a short term-data. The short-term data can't comprehensively reflect the company's M&A performance because company's M&A performance needs the integration of multiple indicators to be reflected after M&A in a long period.

In order to avoid inaccuracy in M&A performance measurement by solely studying the company value changes in the Chinese stock market, which is not sound and immature, and to analyse the M&A performance in a comprehensive way with less interference factors, the paper is applying the comprehensive evaluation approach to measure Chinese companies' cross-border M&A performance.

## 2.4 Ownership structure

#### 2.4.1 Analysis of former research on ownership structure

Ownership structure is an important component of the corporate governance mechanism, and its core content includes the ownership concentration, the equity nature, and the shareholding of executives, etc. In 1990, McConnell and Servaes successfully tested the hypothesis that corporate value is a function of the structure of equity ownership by investigating the relationship between ownership structure and Tobin's Q (market value of a company/ assets' replacement cost). Their study has made the quantitative research on the relationship between ownership structure and corporate value. Therefore, their paper provides an evidence for the paper to apply a quantitative method in the empirical study to analyse the impact of ownership structure on cross-border M&A performance of Chinese companies.

Shleifer and Vishny (1986) have discussed the relationship between the ownership concentration and corporate performance. They think that the small shareholders are less likely to supervise the management because of the high cost of supervision in comparison to the low benefits the group of small shareholders could receive. But the large shareholders, considering the large interests brought to them according to their ownership, are more willing to supervise the management, and will strictly examine the M&A activities launched by the management. Then only M&A deals which are favourable to the company will be accepted in the company. In another word, based on their opinion, the high ownership concentration which brings about the strict supervision will be beneficiary to the corporate performance. Under this circumstance, the large shareholders are the positive factors to the corporate governance. Some other researchers have developed the study about the role of the large shareholders in terms of ownership concentration from different perspectives. Andres (2008) has found out in his study that the performance of family businesses is better in the companies where the founding family is still active either on the executive or the supervisory board as a large shareholder, other large shareholders either adversely affect the performance of the firm or have no conspicuous influence on company's performance. But he also mentioned that if the families are not involved in the supervisory board, but only perform as the large shareholders, then the company's will be as normal as the most companies. Therefore, based on his research from the perspective of family business, the supervision from the large shareholders plays an important role in the company's performance. When the large shareholders are involved in the supervisory tasks of the company, the negative factors in the management can be effectively restrained and favourable decisions which would bring benefits to the company can be made

by the management group. Different from the results of the studies of Shleifer and Vishny (1986) and Andres (2008), La Porta, Lopez, et al. (2000) think the main problem in the corporate governance is that the large shareholders encroach upon the interests of small and medium shareholders in the most companies in the world. The highly concentrated ownership structure provides the convenient conditions for large shareholders to seize personal interests during the process of M&A. Therefore, based on their thoughts, only the controlling right/power of the largest shareholder is restricted and the balance of controlling right/power based on the stakeholders' ownership in the company is formed, can the small and medium shareholders efficiently supervise the behaviours of the large shareholders. Then the best effect of corporate governance will be achieved. In this case, the largest shareholder is considered as the negative internal factor to the corporate governance and the negative effect from the largest shareholder can be mitigated by the other large shareholders to some extent. Apart from the internal factors having the influence on the corporate governance, some external factors play the effective role in corporate governance. Nguyen, et al. (2015) have investigated the relationship between ownership concentration and companies' financial performance from the perspective of national governance quality. By comparing the performance between the companies from Singapore and Vietnam, they have argued that ownership concentration can be considered as an efficient corporate governance mechanism and substitute for weak national governance quality which is very common in the emerging markets. Thus, based on their study, ownership concentration can be used as an effective strategy for emerging countries to avoid the negative effects to the companies' performance due to the weak national governance quality. Then, the corporate governance works in different ways according to the quality of national governance under a specific economic and social system in a country. In addition to the external factor from the nation level, the executives, as the external personnel hired by companies for better management, are the one of the most important factors in the corporate governance. Boateng and Huang (2016) have discussed the fact that agency problems are created by the concentrated ownership, and they have made a favourable argument in their paper that the presence of multiple large shareholders is an important and efficient internal governance mechanism. This sort of corporate governance mechanism can effectively mitigate the agency costs of a firm. Hence, according to their study, the key of solution to the agency problems is to have multiple large shareholders in the company, playing their roles in preventing the excessive concentration of ownership and balancing the power of the shareholders with excessive control rights. Therefore, the agency problem caused by the executives in the



companies' management is inevitable for the corporate governance. The next section is going to go deep into the related theories or concepts.

#### 2.4.2 Agency theory and stakeholder theory

##### (1) Agency theory

The principal-agent relationship is a common phenomenon in modern companies. The separation of ownership and control has led to the phenomenon of a principal-agent relationship between shareholders (the principal(s)) and operators (the agent(s)). It is that shareholders have little or even no direct control over management decisions (Marks, 1999). In the 1930s, American scholars Berle and Means (1933) found that the practice of business owners operating and managing the business did not bring significant benefits to the business. It is that the dual identity of shareholders as owners and management is not conducive to the long-term development of the business. However, if the company hires the external professional managers to manage the company while retaining the right of residual claim, the situation of poor management and operation caused by the combination of ownership and control can be well improved. On this basis, Berle and Means (1933) put forward the "Agency Theory", proposed the separation of ownership and control, and advocated enterprises to convey the control to professionals. Later on, researchers, such as Eisenhardt (1989), Panda and Leepsa (2017), have discussed the agency theory from the theoretical aspects and empirical evidence based on the former research.

In actual business operations, there is an information asymmetry (information is asymmetry in time or in content) between the agent and the principal. Agents can possess more comprehensive information in their daily operations, while the vast majority of small and medium shareholders are absolutely in a weak position for obtaining information. Therefore, this could lead to the consequence that principal can't supervise the agent in place. Meanwhile, Jensen and Meckling (1976) have defined the concept of "agency costs" from the aspect of ownership structure of the firm and they pointed out that there are some divergences between the principal and the agent while the ownership and control are separated. The divergence in the interests for the principal(s) and agent(s) may further lead to the consequence that the agent will commit immoral things that harm the overall interests of the company only for personal profits.

Under this circumstance, whether the company can effectively reduce the losses possibly caused by the operators (the agent(s)) largely depends on the supervision and execution ability of the shareholders (the principal(s)) over the operators (the agent(s)). The power of supervision and execution relies on the ownership of shareholders to a large extent. If the shareholders totally give up the supervision over the operators based on the right provided by their ownership, then the supervision over the operators will not be executed and the agency problem will get worse. On the contrary, if shareholders excessively use the power of supervision conferred by ownership, it will be easy to lead to the consequence of the interference with the decision-making of the operator in the business, then causing the reduction of the operator's work efficiency, and ultimately the company's losses. In a word, a company must deal with the issue of ownership structure, reasonably arrange the shareholding ratio of each shareholder, and keep shareholders' ownership in an appropriate degree, thereby mitigating the agency problem.

## (2) Stakeholder Theory

In 1984, R. E. Freeman introduced the stakeholder theory at the first time in the book *Strategic Management: a Stakeholder Approach*. He thinks that organisations have stakeholders who are groups and individuals that can influence the realisation of the organisation's missions and goals or are affected by the achievement of the organisation's missions and goals (Freeman, 1984).

The core idea of stakeholder theory is that whether an organization can be successful or not is much relying on to what extent it can manage the relationships with key stakeholders that can affect the achievement of its purpose. The stakeholders of an enterprise mainly include ownership stakeholders (such as shareholders), groups with certain social interests in the company (such as government), etc. Because of the interests-driven reason, stakeholders will actively participate in corporate governance. Therefore, their behaviour will affect the business decision-making of the company. But the strengths of the various stakeholders of an enterprise are different, which leads to differences in their influence on corporate governance.

Freeman and Phillips (2002) have also pointed out that the manager's job is to keep the support from all the stakeholder groups, balancing their interests, while making sure that

stakeholder interests can be maximised over time in the organisation. At the same time, stakeholder theory can better help managers clearly describe and promote the shared purpose of the firm (Freeman, Wicks & Parmar, 2004). But maximising the interests doesn't mean that all stakeholders will benefit all the time, most corporate strategies will distribute both benefits and harms between different groups of stakeholders (Freeman & McVea, 2001). Normally, if the largest shareholder holds the majority shares in a company, the problem of over concentration in the ownership structure will possibly turn up. The consequence is that the cost of supervision by small shareholders over the large shareholders becomes much higher. The power in ownership structure will be unbalanced and quickly tip to the side of the largest shareholder. Then the largest shareholder may be more likely to maximise own interests by cooperation with the management and harming the interests of small and medium shareholders (Huang, Dong, et al., 2020). And the reasonable ownership structure can help to improve the level of company governance and may largely avoid the issue of interest conflict in the company.

### (3) Hypothesis formulation

As it is mentioned at the beginning, this paper is aiming at study the impact of ownership structure on the cross-border M&A performance from the perspective of Chinese companies. Ownership structure, as the essential part of corporate governance, can be studied from the ownership concentration and equity structure respectively. The paper has reviewed the literature on the impact of ownership concentration and the largest shareholders on the company's performance, and the paper have also discussed the agency theory and stakeholder theory. According to the agency theory and stakeholder theory, large shareholders have more control power in the company comparing the small shareholders. Because large shareholders have the large proportion of shares in the company, their benefits are consistent with the interests of the company. Hence, they are more active in the participation in the process of company management. However, the small shareholders are less likely to participate in the process of company management, especially supervision over the management, due to the imbalance between low benefits and high cost of participation, they are more willing to be the free riders (Bai & An, 2021). Therefore, there is not enough power balance over the large shareholders and then they may make the M&A decision by putting their influence in the board which may ultimately harm the benefits of the small shareholders. The imbalanced power due to the concentrated ownership in the company may lead to the consequence of the failure of

the corporate governance mechanism and then the comprehensive benefits of the company will be negatively affected (Dai & Li, 2021). Nevertheless, the cross-border M&As are highly related to the long-term interests of the company. Because of the concentrated ownership and the large shareholdings, the interests of the large shareholders are highly positively consistent with the interests of the company. Then the large shareholders will naturally consider the long-term interests of the company as their own long-term interests. Therefore, they will put much more efforts in monitoring the management in order to improve the decision efficiency and temporarily ignore the encroachment upon the benefits from the small shareholders. Meanwhile, when there are multiple large shareholders with similar shareholdings in the company, the motive of mutual restraint and supervision of other large shareholders over the largest shareholders can help prevent the largest shareholders from seeking personal gains by encroaching other large shareholders interests (Wang, 2020). Then, two hypotheses are formulated:

Hypothesis 1 (H1): ownership concentration is positively correlated with company's cross-border M&A performance.

Hypothesis 2 (H2): the degree of restriction on the largest shareholder's controlling right/power is negatively correlated with company's cross-border M&A performance.

According to the agency theory, the separation of ownership and control in the modern company has created the agency problem. The agent hired by the company for the professional management usually have no shares in the company. So, the interests of the agent are not as the interests of the shareholders, closely consistent with the interests of the company, then the agent may make the M&A decisions which are divergent from the interests of the shareholders. Based on the stakeholder theory, the appropriate equity incentives can improve the agent decision efficiency. In another word, when the agent becomes a stakeholder of the company, the interests of the agent and the company will be connected, and the agent will perform better in the management and the M&A decisions in accordance with the interests of the company. Therefore, one hypothesis is formulated:

Hypothesis 3 (H3): the degree of executive ownership is positively correlated with company's cross-border M&A performance.

In China, Chinese SOEs play an important part in the Chinese capital market. But the problems of low efficiency, low earning capacity, etc, have made Chinese SOEs less and less suitable for the market economy system in China according to the study of Chinese researchers. Then Chinese government has paid high attention to this issue and launched the economic reform on Chinese SOEs since 1992 after the late Chinese president Deng Xiaoping finished the southern tour, and the restrictions on Chinese POEs are gradually lifted during the systematic economic reform. Especially in the field of cross-border M&As, Chinese government provides the crucial support to Chinese POEs. Regarding the cross-border M&As from 2014 to 2018, Chinese POEs have performed 629 cross-border M&A deals, but Chinese SOEs have conducted 230 cross-border M&A deals, only nearly one third of the numbers of the cross-border M&A deals performed by POEs. At the same time, the government background of Chinese SOEs has made them bear more policy burdens, and their cross-border M&A behaviours often reflect the will of the government. While pursuing economic benefits, they must also take social responsibility into account (Ren, Zhou, et al., 2021). Therefore, under this circumstance, it is highly possible that there is a big difference in cross-border M&A performance between Chinese SOEs and POEs. Then, to examine the result of Chinese economic reform from the perspective of cross-border M&As, two hypotheses are formulated:

Hypothesis 4 (H4): the long-term cross-border M&A performance of Chinese SOEs and POEs shows an upward trend.

Hypothesis 5 (H5): the nature of State ownership and Private ownership of Chinese companies has the impact on their cross-border M&A performance. (Equity nature is correlated with cross-border M&A performance of Chinese companies)

### 3. Empirical study I

The chapter is aiming to design the comprehensive evaluation model on cross-border M&A performance and analyse the empirical result based on the comprehensive evaluation model.

#### 3.1 Sample selection

This paper selects all Chinese listed companies in mainland China exchanges that have cross-border M&A activities from 2014 to 2018 as the initial research samples. The source that the sample data came from is CSMAR database. The M&A behaviour defined in this article refers to the fact that listed companies obtain the property and control of the target company through equity acquisition, asset acquisition, or adopt the absorption and merger method to realise the rapid development for the company's expansion. This paper takes the completion date as the M&A date and selects cross-border M&As from 2014 to 2018 in which the buyer is a listed company in China. Based on these, samples are selected according to the following criteria:

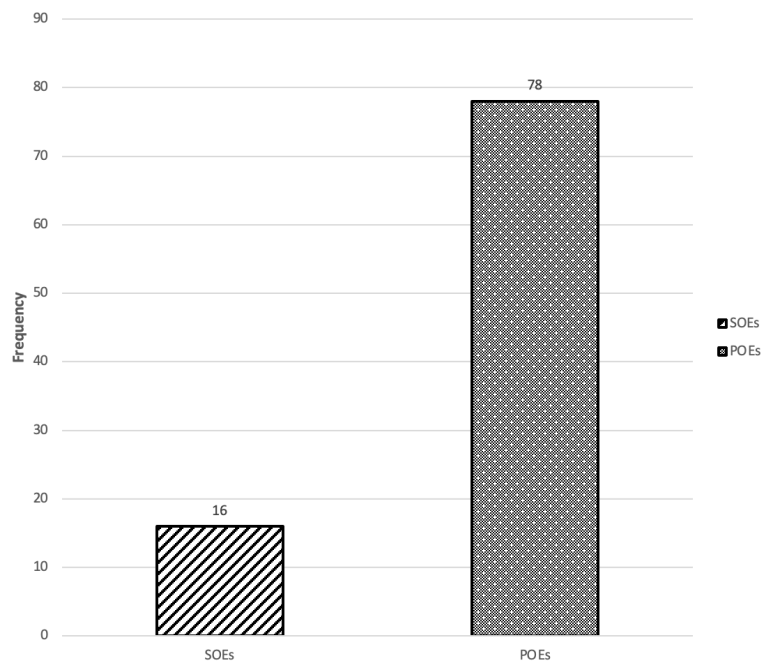
- (1) Companies from Taiwan, which are not in mainland China's capital market, are to be excluded. Although Taiwan is Chinese territories, this region is quite different from mainland China in terms of economy and social system. Additionally, the data of companies from Taiwan are generally absent in CSMAR database.
- (2) Concerning the companies with multiple records of cross-border M&A activities from 2014 to 2018, only the records of the company's initial cross-border M&A activities are going to be kept.
- (3) Listed companies without sufficient relevant data and information are excluded.
- (4) The M&A companies should be listed three years earlier before the cross-border M&As and not delisted three years later after the cross-border M&As.
- (5) Because financial industry's accounting standards are different from other industries, sample companies such as banks and securities are excluded.
- (6) ST and \*ST listed companies are excluded because their financial data is abnormal, and they have the risks of being delisted in a short time.

There are 859 initial samples. After the data filtration based on the criteria above, 94 samples are selected for the analysis. (Table1 and Figure 1)

**Table 1. Sample Description**

		Frequency
Valid	SOEs	16
	POEs	78
	Total	94

**Figure 2. Number of Samples**



### 3.2 Financial ratios selection

This paper is using the accounting-based approach. As it is aforementioned above, the accounting-based approach can be divided into single indicator approach and comprehensive evaluation approach. Although many researchers use single indicator analysis approach to reduce the amounts of calculations. However, single indicator can't sufficiently reflect a company's financial performance. Therefore, this paper selects several initial financial ratios. By analysing whether the selected financial ratios are suitable for the research, financial ratios such as "Growth Rate of Total Assets" are excluded. The remained financial ratios are as followings:

- (1) Earning Capacity

- 1) Return on Assets (ROA). This indicator reflects the capability of a company to use its total assets to earn profits.
- 2) Rate on Equity (ROE). This indicator reflects the level of return on shareholders' equity, and it is used to measure the operating efficiency of the company's own capital.
- 3) Operating Profit Ratio (OPR). This indicator measures the ratio of the company's operating profit to the operating revenue, reflecting the profitability of the company through its business operation.

## (2) Solvency

- 1) Current Ratio (CR). This indicator is also called "Working Capital Ratio" or "Real Ratio". It is an indicator to be used to measure the ability of a company to liquidate the current assets into cash for debt repayment before the short-term debt matures. Current assets include monetary capital, short-term investments, notes receivable, accounts receivable and inventory, etc., which can be liquidated or used within the business cycle of one year or more.
- 2) Quick Ratio (QR). The indicator is also called "Acid Test". It is an indicator to measure the capability of a company to repay current liabilities. Quick assets include cash, securities, notes receivable, accounts receivable, other receivables, etc., which can be liquidated in a relatively short period of time.
- 3) Debt to Assets Ratio (Reciprocal). It is an indicator that is used to measure the company's ability to use the funds provided by creditors to operate business, and also reflects the degree of security of creditors' loans. Because it is a negative indicator, the reciprocal of this indicator is used here.
- 4) Debt to Equity Ratio (Reciprocal). It is an indicator to measure the company's financial leverage, reflecting the degree of the debt used for financing the company's operation. Because it is a negative indicator, the reciprocal of this indicator is used here.



### (3) Operating capability

- 1) Total Assets Turnover (TAT). It is an indicator that measures the ratio of the scale of asset investments to the level of sales. The higher the indicator means the higher the input-output ratio and the higher the profitability. It is also an indicator that directly affects the dividend distribution of listed companies in the capital market.
- 2) Current Assets Turnover (CAT). This indicator reflects the turnover speed of the company's current assets. It analyses the utilisation efficiency of the company's current assets which have the strongest liquidity in the total assets of the company. It is one of the most important indicators that explains the main factors affecting the quality of the company's assets

### (4) Shareholder Profitability

Earnings per Share (EPS). It is one of the most important indicators that reflects a company's profitability. In this paper, it is considered as an independent indicator out of the earning capacity.

**Table 2. Selected Indicators**

Type of Financial Indices	Code	Name	formulae
Earning Capacity	W1	Return on Assets	Net Profit/Average Balance of Total Assets
	W2	Return on Equity	Net Profit/Average of Shareholders' Equity
	W3	Operating Profit Ratio	Operating Profit/Operating Revenue
Solvency	W4	Current Ratio	Current Assets/Current Liabilities
	W5	Quick Ratio	(Current Assets – Inventories)/Current Liabilities
	W6	Debt to Assets Ratio (Reciprocal)	Reciprocal of Total Liabilities/Total Assets
	W7	Debt to Equity Ratio (Reciprocal)	Reciprocal of Total Liabilities/Total Owners' Equity
Operating Capacity	W8	Total Assets Turnover	Operating Revenue/Average Total Assets

	W9	Current Assets Turnover	Operating Revenue/Average Current Assets
Shareholder Profitability	W10	Earnings per Share	Net Profit/Total Shares

### 3.3 Factor analysis and cross-border M&A performance

We collect the financial data of 4 years before and after the cross-border M&A deals based on the selected 10 financial ratios. In the factor analysis, financial ratios will be compressed into the comprehensive scores. Hence, the common factors of each group of the financial ratios are to be extracted and then multiply their weights to form the scores of each group. Then a comprehensive score model is to be established.

The comprehensive score model is as following:

$$F_{mi} = a_{i1}W1 + a_{i2}W2 + a_{i3}W3 + a_{i4}W4 + a_{i5}W5 + a_{i6}W6 + a_{i7}W7 + a_{i8}W8 + a_{i9}W9 + a_{i10}W10$$

In this model,  $F_{mi}$  represents the score of the  $m$ -th common factor in the  $i$ -th sample company. And  $a$  is the coefficient of the  $m$ -th common factor on the corresponding selected financial ratios (Taylor, Chen, et al. 2020).

The next step is to build a comprehensive evaluation model. This model is based on scores of the common factors and the variance contribution rate of the extracted components. The comprehensive evaluation model is as following:

$$T_{iy} = c_{i1}F_{i1} + c_{i2}F_{i2} + c_{i3}F_{i3} + c_{i4}F_{i4} + \dots + c_{im}F_{im}$$

In this model,  $y$  is the relative time for the cross-border M&A event (from 2 years before M&A deal to 2 years after the M&A deal).  $T_{iy}$  means the comprehensive score of the cross-border M&A performance of the  $i$ -th selected sample company in the year  $y$ . And the coefficient  $c_{im}$  indicates the variance contribution rate of the  $m$ -th common factor (extracted component) for the  $i$ -th selected sample company (Taylor, Chen, et al. 2020).

The steps of factor analysis:

1. Use SPSS 26.0 to do the dimensionality reduction analysis on the ten selected financial ratios. Then, conduct KMO and Bartlett's Test to determine whether the selected financial ratios are suitable for factor analysis.
2. Calculate the correlation coefficient matrix, then the variance contribution rates corresponding to the eigenvalues which are bigger than 1 are to be used as the main factor weight.
3. Set up the load matrix, obtain the orthogonal rotation matrix with the largest variance, and derive the comprehensive score function. Then calculate the comprehensive scores of each sample company by using the selected financial ratios.

KMO value is usually used for testing whether the data is suitable for factor analysis. If the KMO value is closer to 1, the correlation between the original data is also stronger. Then the data is more suitable for factor analysis. Normally, if the KMO value is greater than 0.6, the original variables are suitable for factor analysis. According to the table 2, the KMO values from T<sub>-2</sub> to T<sub>2</sub> are respectively 0.694, 0.660, 0.633, 0.705, and 0.650. They are all more than 0.600. The significance level of each variable is 0.000, it means data is generally normally distributed. Therefore, the data of selected indicators is suitable for factor analysis.

**Table 3. KMO and Bartlett Sphericity test**

<b>KMO and Bartlett's Test</b>		T <sub>-2</sub>	T <sub>-1</sub>	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.694	0.660	0.633	0.705	0.650
Bartlett's Test of Sphericity	Approx. Chi-Square	1747.519	1267.204	1364.377	1957.152	1544.127
	df	45	45	45	45	45
	Sig.	0.000	0.000	0.000	0.000	0.000

Principal Component Analysis (PCA) is used for factor analysis on the cross-border M&A performance. In the table 4, the second column shows the communalities (the sum of the squared loadings for selected variables) while extracting the eigenvalues. If the effect of a

financial index is higher, the extraction of the original information from the variables is accordingly larger. Obviously, the extraction values of the financial indicators are all more than 0.500, therefore the result of PCA is very ideal and the extracted common factors have very strong interpretation on the variables in this paper.

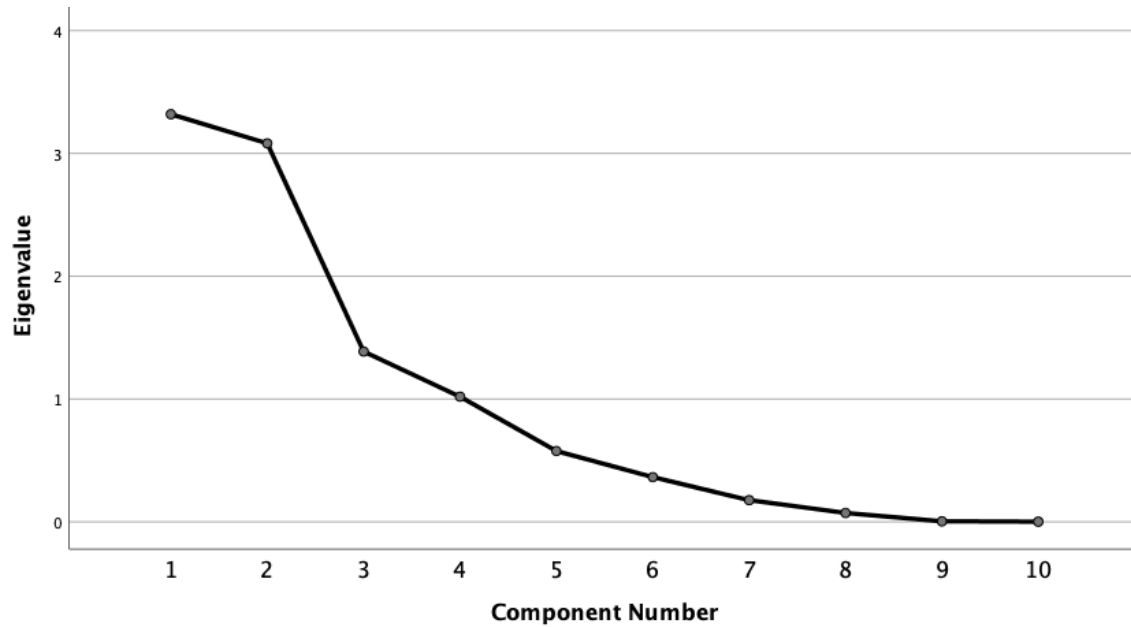
**Table 4. Communalities**

	Initial	Extraction
Return on Assets	1.000	.905
Return on Equity	1.000	.875
Operating Profit Ratio	1.000	.867
Current Ratio	1.000	.998
Quick Ratio	1.000	.996
Reciprocal - Debt to Assets Ratio	1.000	.996
Reciprocal - Debt to Equity Ratio	1.000	.996
Total Assets Turnover	1.000	.849
Current Asset Turnover	1.000	.777
Earnings per Share	1.000	.546

Extraction Method: Principal Component Analysis.

According to Figure 3, the eigenvalues of the first 4 factors are more than 1.000, the eigenvalues of the last 6 factors are all less than 1.000 and the line connecting the 6 factors is relatively flat. Then, from the Table 5, the cumulative contribution rate of squared loadings of the first 4 factors and cumulative contribution rate of rotated squared loadings of the first 4 factors are both more than 80%, therefore, selecting the first 4 factors with eigenvalues larger than 1 as the common factors for the scoring system of the cross-border M&A performance can interpret all the variables well.

**Figure 3. Scree Plot**



**Table 5. Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.319	33.185	33.185	3.319	33.185	33.185	3.079	30.786	30.786
2	3.082	30.816	64.001	3.082	30.816	64.001	2.025	20.247	51.033
3	1.387	13.867	77.868	1.387	13.867	77.868	2.010	20.098	71.131
4	1.019	10.190	88.058	1.019	10.190	88.058	1.693	16.927	88.058
5	.576	5.762	93.820						
6	.364	3.639	97.459						
7	.176	1.763	99.222						
8	.072	.723	99.945						
9	.004	.041	99.987						
10	.001	.013	100.000						

Extraction Method: Principal Component Analysis.

Before the rotation of component Matrix, the loadings of all the variables on the first and second factors are relatively high, it means that the first and second factors have very high correlations with the variables. But the third and fourth factors doesn't have a high correlation with the variable, it means that these factors don't interpret the variables well. Therefore, the rotation method is applied.

**Table 6. Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
Return on Assets	-.264	.907	.029	.108
Return on Equity	-.436	.827	.028	-.010
Operating Profit Ratio	-.242	.848	-.277	-.113

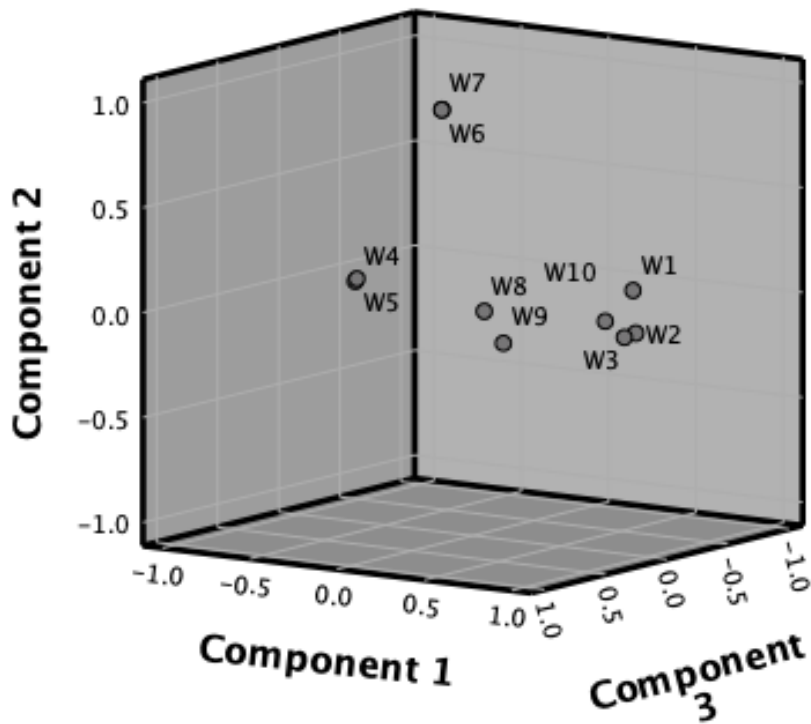
Current Ratio	.758	.316	.285	-.492
Quick Ratio	.761	.324	.285	-.481
Reciprocal - Debt to Assets Ratio	.790	.312	.140	.505
Reciprocal - Debt to Equity Ratio	.788	.312	.145	.507
Total Assets Turnover	-.430	.002	.810	.091
Current Asset Turnover	-.577	-.039	.665	.038
Earnings per Share	-.289	.674	-.091	.004

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

The rotation method of Varimax is applied. Then, from Figure 4 after rotation, the 4 components show the good interpretation for the 4 groups of variables. According to Table 7, the variables of “Return on Assets”, “Return on Equity”, “Operating Profit Ratio”, and “Earnings per Share” have really high loadings on the first factor. The variables of “Reciprocal – debt to assets ratio” and “Reciprocal – debt to equity ratio” have the high loadings on the second factor. The variables of “Current Ratio” and “Quick Ratio” have the high loadings on the third factor. The variables of “Total Assets Turnover” and “Current Assets Turnover” have high loadings on the fourth factor. In general, the factors after the rotation can have much better interpretation on the variables in comparison with the unrotated ones.

**Figure 4. Component Plot in Rotated Space**



**Table 7. Rotated Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
Return on Assets	.930	.154	.017	.130
Return on Equity	.914	-.058	-.027	.187
Operating Profit Ratio	.910	-.066	.059	-.179
Current Ratio	.002	.241	.964	-.101
Quick Ratio	.008	.253	.960	-.101
Reciprocal - Debt to Assets Ratio	.000	.955	.254	-.140
Reciprocal - Debt to Equity Ratio	.001	.956	.253	-.134
Total Assets Turnover	.039	-.044	-.038	.919

Current Asset Turnover	.070	-.209	-.150	.840
Earnings per Share	.738	-.019	-.029	.023

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

According to the table 7, the factor analysis models are as followings:

$$W1 = 0.930F_1 + 0.154F_2 + 0.017F_3 + 0.130F_4$$

$$W2 = 0.914F_1 - 0.058F_2 - 0.027F_3 + 0.187F_4$$

...

$$W10 = 0.738F_1 - 0.019F_2 - 0.029F_3 + 0.023F_4$$

These models reflect the degree of interpretation of each component to the selected financial ratios.

Table 8 is the component score covariance matrix of the 4 factors. This matrix demonstrates the correlation relationship between extracted components. It is very obvious that these 4 factors (extracted components) are not correlated. Therefore, the design for factor analysis is very suitable for establishing the scoring system of the cross-border M&A performance.

**Table 8. Component Score Covariance Matrix**

Component	1	2	3	4
1	1.000	.000	.000	.000
2	.000	1.000	.000	.000
3	.000	.000	1.000	.000
4	.000	.000	.000	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Scores.

Table 9 is the component score coefficient Matrix. The method of regression is applied for generating the factor scores and the scores are output in the Matrix.



**Table 9. Component Score Coefficient Matrix**

	Component			
	1	2	3	4
Return on Assets	.298	.107	-.035	.058
Return on Equity	.292	-.015	.005	.066
Operating Profit Ratio	.308	-.092	.035	-.168
Current Ratio	-.007	-.146	.561	.043
Quick Ratio	-.005	-.136	.555	.044
Reciprocal - Debt to Assets Ratio	-.003	.550	-.135	.047
Reciprocal - Debt to Equity Ratio	-.003	.551	-.136	.051
Total Assets Turnover	-.034	.096	.063	.593
Current Asset Turnover	-.017	.009	.033	.510
Earnings per Share	.242	-.007	-.020	-.028

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 Component Scores.

According to the Table 9, comprehensive score functions are as followings:

$$F1 = 0.298W1 + 0.292W2 + 0.308W3 - 0.007W4 - 0.005W5 - 0.003W6 - 0.003W7 - 0.034W8 - 0.017W9 + 0.242W10$$

$$F2 = 0.107W1 - 0.015W2 - 0.092W3 - 0.146W4 - 0.136W5 + 0.550W6 + 0.551W7 + 0.096W8 + 0.009W9 - 0.007W10$$

$$F3 = -0.035W1 + 0.005W2 + 0.035W3 + 0.561W4 + 0.555W5 - 0.135W6 - 0.136W7 + 0.063W8 + 0.033W9 - 0.020W10$$

$$F4 = 0.058W1 + 0.066W2 - 0.168W3 + 0.043W4 + 0.044W5 + 0.047W6 + 0.051W7 + 0.593W8 + 0.510W9 - 0.028W10$$

Then, we calculate the score of each sample company on each factor according to the factor loading matrix of each year and use the variance contribution rate to assign the weight of the common factor to get the comprehensive evaluation model of each sample company in each

year. Therefore, the model of the comprehensive financial performance (comprehensive evaluation model) of the year of the cross-border M&A transaction is as following:

$$T_0 = (30.786F1 + 20.247F2 + 20.098F3 + 16.927F4)/88.058$$

Following the steps above, the functions of the comprehensive financial performance of the second year before the cross-border M&A event, the year before the cross-border M&A event, the year after the cross-border M&A event, and the second year after the cross-border M&A event can be derived. The concrete steps are the same as the aforementioned steps, therefore they are not shown on this page due to the space limitations. Hence, the models are as followings:

$$T_{-2} = (38.979F1 + 30.655F2 + 18.900F3)/88.535 \text{ (3 components extracted)}$$

$$T_{-1} = (39.137F1 + 29.128F2 + 17.624F3)/85.889 \text{ (3 components extracted)}$$

$$T_1 = (36.286F1 + 32.351F2 + 17.108F3)/85.746 \text{ (3 components extracted)}$$

$$T_2 = (36.731F1 + 34.948F2 + 16.529F3)/88.207 \text{ (3 components extracted)}$$

### 3.4 The result of factor analysis on the cross-border M&A performance

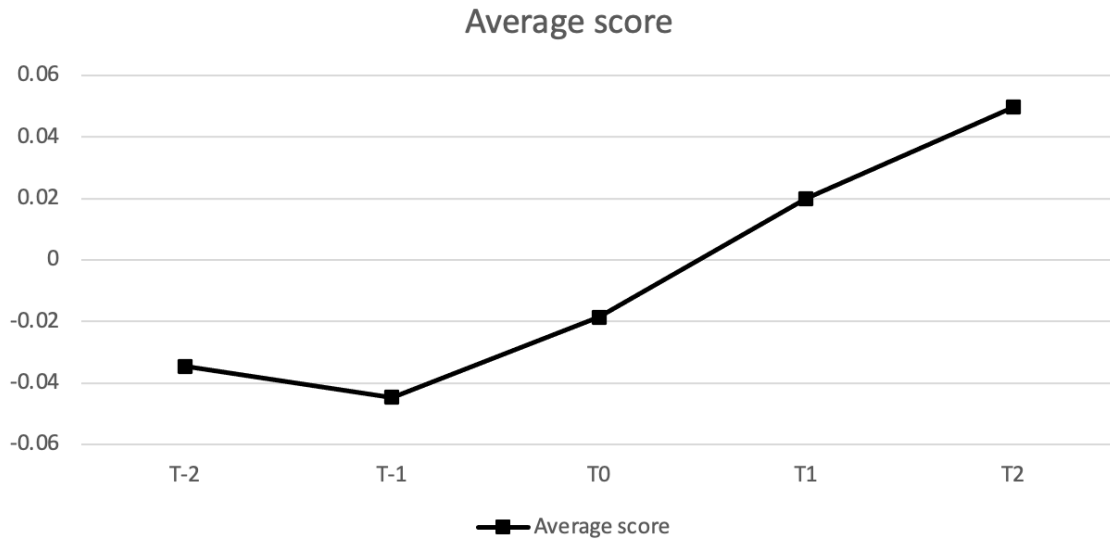
#### 3.4.1 The comprehensive performance scores of all samples

According to the result of comprehensive financial performance scores calculated by SPSS, Excel then is used to sort out the comprehensive financial performance scores of the sample companies, calculate and summarise the average of the annual comprehensive scores. They are presented in Table 10 and Figure 5.

**Table 10. Summary of the means of comprehensive performance scores**

Year	T <sub>-2</sub>	T <sub>-1</sub>	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>
Means of Comprehensive Scores	-0.034605	-0.044577	-0.018568	0.020076	0.049826

**Figure 5. Overall M&A performance**



From Figure 5, the trend of cross-border M&A performance shows relatively upward. During the two years before a Chinese company has completed its cross-border M&A event, the trend of company's financial performance has an approximate v shape, it goes downward at first and then goes upward. From the year when the company completes its cross-border M&A event to the second year after the M&A event, the financial performance of the company shows a stable upward trend, it goes up quickly in the first year and slightly slows down in the second year.

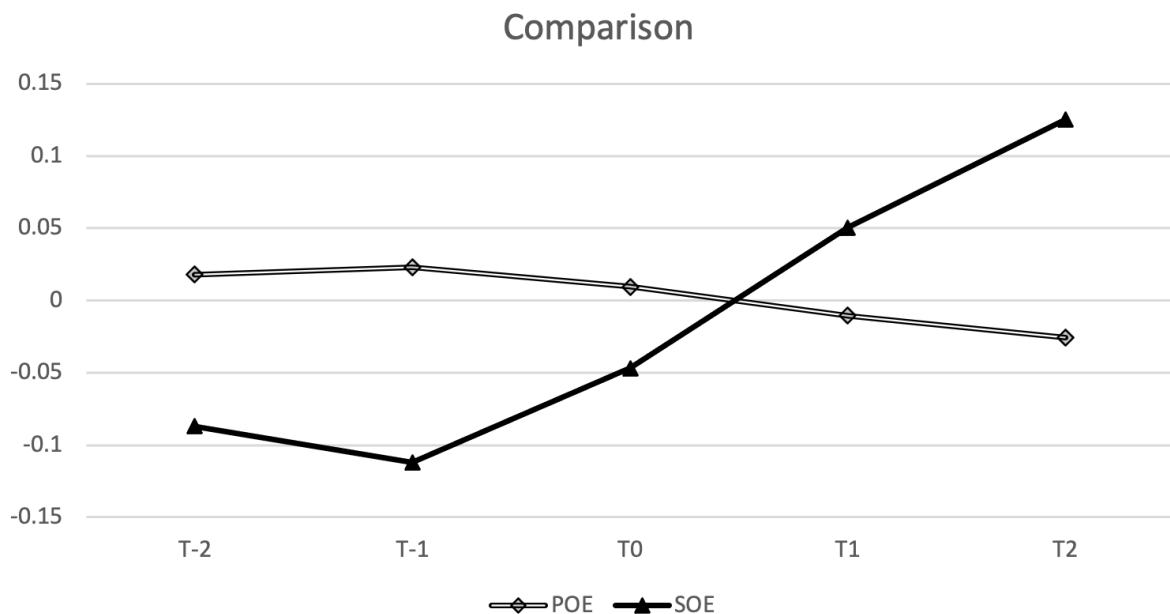
### 3.4.2 The comparison between SOEs and POEs regarding the cross-border performance

The comprehensive performance scores are sorted out by Excel and presented in Table 11. Figure 6 well reflects the changing trend of cross-border M&A performance of Chinese SOEs and POEs. Although, the general cross-border M&A performance shows an upward trend *grosso modo*, Chinese POEs and SOEs respectively show the different trend in the long-term cross-border M&A performance. For Chinese POEs, they have a flat but slightly downward trend in the long-term M&A performance. But for Chinese SOEs, their performance trade is closely similar to the general trend in Figure 5, it goes upward generally. Additionally, before the cross-border M&A event, Chinese SOEs have negative financial performance, but after the cross-border M&A event, the financial performance of SOEs goes up quickly and then become positive within the first year after cross-border M&A event.

**Table 11. Means of comprehensive performance scores**

Year		T <sub>-2</sub>	T <sub>-1</sub>	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>
Means of Comprehensive Scores	SOEs	-0.087073	-0.112161	-0.046721	0.050515	0.125368
	POEs	0.017861	0.023007	0.009584	-0.010362	-0.025717

**Figure 6. Comparison of the trend of cross-border M&A performance**



### 3.5 Analysis of the result

The performance trend of Chinese SOEs demonstrated in Figure 6 is basically consistent with one aspect in the hypothesis 4 that Chinese SOEs have an upward trend in terms of the long-term cross-border M&A performance. But the hypothesis is not completely supported by the result in Figure 6, because the long-term cross-border M&A performance of Chinese POEs doesn't show an upward trend. With respect to the result, it can basically prove that the economic reform on Chinese SOEs by Chinese government in terms of cross-border M&A sector is effective. The cross-border M&As have brought about the substantial positive changes into the long-term performance of Chinese SOEs. Since Chinese president Xi Jinping came into power in 2012, the Chinese government under the leadership of president Xi has proposed to comprehensively improve the level of open economy and emphasised adapting to the new situation of economic globalization. And the reform on Chinese economic system, especially on Chinese corporates, has been widened and deepened (Tian, et al., 2021). Meanwhile, with the launch of Chinese "Belt and Road initiative", Chinese government encouraged Chinese

companies (both SOEs and POEs) to actively perform outbound investments, especially in the cross-border M&A field (Guo & Han, 2021). In accordance with the reform, Chinese government has published measures and beneficial policies for supporting Chinese SOE and POEs' cross-border M&A transactions without the direct political interference and support that may go against the open and free market principles. Therefore, taking into the Chinese reform context into consideration, the empirical result reflects that the corporate reform under the leadership of Chinese president Xi has brought about enormous positive effects on the cross-border M&A performance of Chinese SOEs. On the contrary, the restrictions on Chinese POEs in terms of cross-border M&As are much less than these on Chinese SOEs under the corporate reform, Chinese POEs don't have a satisfactory long-term performance by performing the cross-border M&A and even have the downward-trend performance by the cross-border M&A transactions. This situation is worthy of much concern from Chinese economic reformers. Because the core of the corporate reform is to strengthen the status of Chinese POEs as the main players in Chinese market in order to further open Chinese market and enhance the economic vitality. If Chinese POEs can't fully play their due roles in the capital market, the Chinese government's comprehensive and deep opening-up reform plan in the next stage will be definitely affected. The next chapter is to analyse the impact of ownership structure on cross-border M&A for explaining the reason that leads to the different performance of Chinese SOEs and POEs in terms of cross-border M&A transactions.

## 4. Empirical study II

This chapter is aiming to examine the impact of ownership structure on cross-border M&A performance by conducting regression analysis and analyse the regression results. Then based on the results analysis, to provide proper managerial implications and policy suggestions for Chinese companies and Chinese government.

### 4.1 Variable description and model design

In order to examine the impact of ownership structure on cross-border M&A performance, the difference of performance scores which can generally reflect the dynamic changes in the financial performance of the company before and after cross-border M&A deals is used as the dependent variable and  $\Delta\text{PER}$  is used to represent the depend variable. In the former part, T-2,

T<sub>-1</sub>, T<sub>0</sub>, T<sub>1</sub>, T<sub>2</sub> are used to represent the comprehensive performance scores before and after cross-border M&A deals respectively. Therefore, the differences of the comprehensive performance scores in the paper are T<sub>2</sub>-T<sub>-2</sub>, T<sub>2</sub>-T<sub>-1</sub>, T<sub>2</sub>-T<sub>0</sub>, T<sub>2</sub>-T<sub>1</sub>, T<sub>1</sub>-T<sub>0</sub>.

According to the theories and concepts of ownership structure analysed in the former section, there are 4 independent variables in this paper. They are degree of restriction on the largest shareholder's controlling right/power, ownership concentration, rate of executive shares, and equity nature. The data of the variables is collected from CSMAR database. The balance of power in ownership is reflected by the comparison between the shareholdings of other large stakeholders and the shareholding of the largest shareholder. The ownership concentration measures the company's equity distribution and reflects the situation of corporate governance. The rate of executive shares shows the situation of executive ownership in the company, and it is the basis for the research on the effect of the equity incentive plan. The equity nature is the key indicator to distinguish POEs and SOEs.

(1) Degree of Restriction on the Largest Shareholder's Controlling right/Power (BOP)

Degree of Restriction on the Largest Shareholder's Controlling right/Power = the shareholdings of the second and third largest shareholders/ the shareholding of the largest shareholder

(2) Ownership concentration (OCN)

Ownership concentration = the sum of squares of the share ratios of the top three major shareholders (Herfindahl-Hirschman Index)

(3) Rate of executive shares (Executive ownership) (ROES)

Rate of executive shares = Total executive shares/ Total shares

(4) Equity nature (ENT)

Equity nature = 0 or 1 (dummy variable); SOE = 1, POE = 0

We have selected two control variables which are not involved in the research but influencing the financial performance and quite possibly affecting the result of the research. These control variables are related party transaction and major assets restructuring. Related party transactions are very common under the environment of market economy. On the one

hand, related party transaction can reduce the transactional costs. On the other hand, related party transaction may cause the damage to the interests of small shareholders under some specific circumstances. Major assets restructuring refers to the asset transaction of the listed company and its controlling company to purchase and sell equity to a certain extent, which is a long-term equity investment.

(1) Related party transaction (RPT)

Related party transaction = 0 or 1 (dummy variable); M&A event of related party transaction = 1, M&A event not with related party transaction = 0

(2) Major assets restructuring (MAR)

Major assets restructuring = 0 or 1 (dummy variable); M&A deal related to major assets restructuring = 1, M&A deal not related to major assets restructuring = 0

Based on the research hypotheses and the variables selected, we establish the multiple regression model to examine the impact of ownership structure on the cross-border M&A performance. The model is as following:

$$\Delta PER = \beta_0 + \beta_1 BOP + \beta_2 OCN + \beta_3 ROES + \beta_4 ENT + \beta_5 RPT + \beta_6 MAR + \varepsilon$$

The data of selected variables in the year of  $T_0$  is demonstrated in table 12. Z-reciprocal is the ratio of the sum of shares of the 2nd and 3rd largest shareholders to the shares of the largest shareholder, reflecting the degree of restriction from the 2nd and 3rd large shareholders on the largest shareholder. In Table 12, the median and mean of the Z-reciprocal are both more than 40%, it shows that, in the collected data, the 2nd and 3rd shareholders form a relatively large restriction over the controlling power of the largest shareholder. Concentration-3 is the sum of shares of the top 3 large shareholders, directly reflecting to what degree the ownership is concentrated in a certain group of shareholders. Herfindahl-3 is the Herfindahl-Hirschman Index which is widely applied in economics and used to measure the degree of ownership distribution. It can better measure the ownership concentration, but it is not as direct as the normal concentration indicator to reflect the ownership concentration situation. In this paper, the variable of Herfindahl-3 is the sum of squares of the share ratios of the top three major shareholders. According to the statistics of Concentration-3 in table 12, the ownership of top 3

shareholders is around 30% in general. Therefore, in the collected data, the ownership of sample companies is concentrated but not highly in few large shareholders. At the same time, the statistics of Herfindahl-3 are much lower than 1, thus the ownership in the sample companies is uniformly distributed. The statistics of rate of executive shares, reflecting the level of the executive ownership, have the median of 0.0275595 and the mean of 0.0684187. So, the degree of executive ownership is not conspicuous in the collected date of sample companies. Relevance sign and major restructuring sign are the dummies, reflecting whether the sample company's cross-border M&A transaction is related part transaction, or the sample company conducts cross-border M&A transaction related to the major assets restructuring. According to the statistics, in the collected, there are around one fifth of sample companies have the related part transaction in cross-border M&A and around one third of sample companies conducted cross-border M&A related to major assets restructuring. The data of selected variables of Z-reciprocal, Concentration-3, and Herfindahl-3 in the year of T-2, T-1, T<sub>1</sub> shows the highly similar pattern, hence it is not presented here to avoid redundant demonstration and explanation.

**Table 12. Descriptive Statistics**

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Z-reciprocal	94	.011204	1.00000	.4012820	.4199289	.29318370
Concentration_3	94	.017694	.819354	.2976720	.3230569	.20613027
Herfindahl_3	94	.000022	.423629	.0275595	.0684187	.09123500
RateOfExecutiveSha	94	.000000	.657359	.0299804	.1400307	.18138517
res						
RelevanceSign	94	0	1	0	.19	.396
MajorRestructuringS	94	0	1	0	.27	.444
ign						
Valid N (listwise)	94					

**Table 13. Selected Variables**

Type of Variables	Abbreviation	Name of Variables	Definition of Variables
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Dependent Variable	$\Delta$ PER	Comprehensive Performance Score Difference	The performance score difference from T <sub>-2</sub> to T <sub>2</sub>
Independent Variable	BOP	Degree of restriction on the largest shareholder's controlling right/power	the sum of shares of the second and third largest shareholders/ shares of the largest shareholder
	OCN	Ownership Concentration	Herfindahl-Hirschman Index, the sum of squares of the share ratios of the top three major shareholders
	ROES	Rate of Executive Shares	Total Executive Shares/ Total Shares
	ENT	Equity Nature	Dummy variable, SOEs, the value is "1"; POEs, the value is "0"
Control Variable	RPT	Related Party Transaction	Dummy variable, if the M&A is related party transaction, the value is "1"; If not, the value is "0"
	MAR	Major Assets Restructuring	Dummy variable, if the M&A is related to the major assets restructuring, the value is "1"; If not, the value is "0"

## 4.2 Multicollinearity test

Before conducting the regression analysis, it is necessary to take the multicollinearity test to ensure that the independent variables for the regression analysis are not correlated. If there are high correlations between independent variables, problems will emerge while fitting the model and interpreting the results. The paper assesses the multicollinearity by variance inflation factor (VIF). Generally speaking, if VIF is more than 10, it indicates that there is a serious multicollinearity, and the independent variable is not suitable for regression analysis. If VIF is less than 10, the multicollinearity is not serious, and the independent variable can be used for regression analysis. According to the results of multicollinearity test shown in table 14 by applying SPSS 26.0, the VIFs between variables are all less than 3. Therefore, it is obvious that there are no multicollinearity problems between the selected independent variables and the independent variables are available for regression analysis.

**Table 14. Collinearity Statistics**

	$T_2 - T_{-2}$ VIF	$T_2 - T_{-1}$ VIF	$T_2 - T_0$ VIF	$T_2 - T_1$ VIF	$T_1 - T_0$ VIF
<b>BOP</b>	<b>1.421</b>	<b>1.268</b>	<b>1.340</b>	<b>1.279</b>	<b>1.340</b>
<b>OCN</b>	<b>2.105</b>	<b>1.622</b>	<b>1.506</b>	<b>1.466</b>	<b>1.506</b>
<b>ROES</b>	<b>1.479</b>	<b>1.641</b>	<b>1.489</b>	<b>1.622</b>	<b>1.489</b>
<b>ENT</b>	<b>1.670</b>	<b>1.538</b>	<b>1.573</b>	<b>1.520</b>	<b>1.573</b>
<b>RPT</b>	<b>1.356</b>	<b>1.384</b>	<b>1.317</b>	<b>1.350</b>	<b>1.317</b>
<b>MAR</b>	<b>1.263</b>	<b>1.212</b>	<b>1.244</b>	<b>1.194</b>	<b>1.244</b>

## 4.3 Multiple Regression Analysis

After the multicollinearity test, we performed multiple regression analysis in SPSS26.0. The results are shown in table 15.

**Table 15. Regression Results**

		$T_2 - T_{-2}$	$T_2 - T_{-1}$	$T_2 - T_0$	$T_2 - T_1$	$T_1 - T_0$
<b>Constant</b>	<b>Coefficients</b>	0.090	0.140	0.177	0.147	0.282
	<b>t statistics</b>	0.582	0.705	1.041	0.711	1.776
<b>BOP</b>	<b>Coefficients</b>	<b>-0.369<sup>***</sup></b>	<b>-0.216<sup>*</sup></b>	<b>-0.324<sup>***</sup></b>	<b>-0.302<sup>***</sup></b>	<b>-0.328<sup>***</sup></b>
	<b>t statistics</b>	-3.100	-2.046	-2.797	-2.661	-2.809
<b>OCN</b>	<b>Coefficients</b>	<b>0.235<sup>*</sup></b>	<b>-0.177</b>	<b>-0.121</b>	<b>-0.059</b>	<b>-0.139</b>
	<b>t statistics</b>	1.622	-1.396	-0.985	-0.487	-1.125
<b>ROES</b>	<b>Coefficients</b>	<b>0.099</b>	<b>0.157</b>	<b>0.174</b>	<b>0.186</b>	<b>0.074</b>
	<b>t statistics</b>	0.814	1.269	1.425	1.457	0.601
<b>ENT</b>	<b>Coefficients</b>	<b>0.169</b>	<b>0.276<sup>**</sup></b>	<b>0.091</b>	<b>0.071</b>	<b>0.090</b>
	<b>t statistics</b>	1.309	2.171	0.723	0.570	0.714

<b>RPT</b>	<b>Coefficients</b>	<b>0.040</b>	<b>-0.025</b>	<b>0.017</b>	<b>0.018</b>	<b>-0.126</b>
	<b>t statistics</b>	0.343	-0.211	0.152	0.158	-1.086
<b>MAR</b>	<b>Coefficients</b>	<b>-0.002</b>	<b>-0.009</b>	<b>0.145</b>	<b>0.164</b>	<b>0.081</b>
	<b>t statistics</b>	-0.020	-0.084	1.299	1.495	0.721
<b>Adjusted R Square</b>		0.083	0.041	0.070	0.062	0.055
<b>Durbin-Watson</b>		1.968	2.015	2.180	2.032	1.912
<b>F Statistics</b>		<b>2.229<sup>**</sup></b>	<b>1.644<sup>*</sup></b>	<b>2.172<sup>*</sup></b>	<b>2.032<sup>*</sup></b>	<b>1.898<sup>*</sup></b>

**N.B.:** <sup>\*\*\*</sup>, <sup>\*\*</sup>, and <sup>\*</sup> indicate significant levels at 1%, 5%, and 10%, respectively.

From table 15, we can see that all models have passed the F test, showing the significant levels at 10% at least. Therefore, the regression models are effective for the impact of ownership structure on the cross-border M&A performance. The Durbin-Watson values from the regression results are all close to 2. Hence there is no autocorrelation problems between independent variables. However, the value of adjusted r square of each regression model is around or less than 0.1, it indicates that each regression model doesn't have a high degree of fitting. Hence the regression models can interpret the changes in the cross-border M&A performance to some extent, but not fully.

(1) The degree of restriction on the largest shareholder's controlling right/power (BOP) and the cross-border M&A performance

According to the result of regression Analysis in table 15, the degree of restriction on the largest shareholder's controlling right/power (BOP) is negatively correlated with the cross-border M&A performance. The significant levels of BOP are at 1% on models of T<sub>2</sub>-T<sub>-2</sub>, T<sub>2</sub>-

$T_0$ ,  $T_2-T_1$ ,  $T_1-T_0$ , 5% on  $T_2-T_1$ . Therefore, BOP influences the cross-border M&A performance negatively, the controlling right/power of the largest shareholder is more restricted by other large shareholders, the M&A performance will be more negatively affected. Then, hypothesis 2 is confirmed by the result.

#### (2) Ownership concentration (OCN) and the cross-border M&A performance

According to the result in table 15, ownership concentration is only positively corrected with the cross-border M&A performance on the model of  $T_2-T_2$ , but negatively corrected with it in others model. Furthermore, the coefficient of correlation of OCN is only significant at 10% on the first model, but not on other models. Therefore, the concentrated ownership or dispersed ownership doesn't have the significant impact on the changes in the cross-border M&A performance neither positively nor negatively. Then, hypothesis 1 is not supported by the result.

#### (3) Rate of executive shares (executive ownership) (ROES) and the cross-border M&A performance

According to the result in table 15, rate of executive shares (executive ownership) shows a positive correlation with the cross-border M&A performance on all models. However, the coefficient of ROES is not significant at any time. Thus, it indicates that the equity incentive plan for executives doesn't have a significant impact on the cross-border M&A performance. Therefore, hypothesis 3 is not well supported by the empirical result.

#### (4) Equity nature (status of SOE and POE of Chinese companies) (ENT) and the cross-border M&A performance

From the result in table 15, the coefficient of equity on all models is positive, but only significant at 5% on  $T_2 - T_1$ . It indicates that the regression results can't support that the equity nature of a company can affect the cross-border M&A performance in general. Then, the 6<sup>th</sup> hypothesis is rejected by the empirical result.

### 4.4 Robustness test

To examine the robustness and effectiveness of the regression results, the paper conducts the robustness test. The ratio of shareholdings of the second and third largest shareholders to the largest shareholder is replaced by the ratio of shareholdings of the second, third and fourth largest shareholders to the largest shareholder, the sum of squares of the share ratios of the top

three large shareholders is replaced by the sum of squares of the share ratios of the top ten large shareholders, the dummy variable of equity nature is replaced by the variable of rate of state shares, the dummy variable of Major Assets Restructuring is replaced by the variable of expense value of M&A deals.

Then, by performing the regression analysis in SPSS 26.0, the results are produced and shown in table 16 and table 17. According to table 16, there is no multicollinearity as VIFs between variables are all less than 10. From the table 17, the results are similar to the results table 15. There are only few differences, the coefficients of the variable of ownership concentration and the variable of expense value are significant on  $T_1-T_0$ . In general, the results of robustness confirm hypothesis 2 and reject hypothesis 1, hypothesis 3, and hypothesis 6, consistent with the results from the empirical analysis of the impact of ownership structure on the cross-border M&A performance.

**Table 16. Collinearity Statistics**

	$T_2 - T_{-2}$ VIF	$T_2 - T_{-1}$ VIF	$T_2 - T_0$ VIF	$T_2 - T_1$ VIF	$T_1 - T_0$ VIF
<b>Ratio of shareholdings of the second, third and fourth largest shareholders to the largest shareholder</b>	<b>1.347</b>	<b>1.262</b>	<b>1.334</b>	<b>1.510</b>	<b>1.334</b>
<b>HHI-10</b>	<b>1.578</b>	<b>1.603</b>	<b>1.459</b>	<b>1.257</b>	<b>1.459</b>
<b>ROES</b>	<b>1.369</b>	<b>1.652</b>	<b>1.505</b>	<b>1.090</b>	<b>1.505</b>
<b>Rate of state shares</b>	<b>1.087</b>	<b>1.524</b>	<b>1.168</b>	<b>1.190</b>	<b>1.168</b>
<b>RPT</b>	<b>1.155</b>	<b>1.389</b>	<b>1.215</b>	<b>1.168</b>	<b>1.215</b>
<b>Expense value</b>	<b>1.115</b>	<b>1.218</b>	<b>1.126</b>	<b>1.153</b>	<b>1.126</b>

**Table 17. Regression Results**

		$T_2 - T_{-2}$	$T_2 - T_{-1}$	$T_2 - T_0$	$T_2 - T_1$	$T_1 - T_0$
<b>Constant</b>	<b>Coefficients</b>	0.332	0.541	0.641	0.516	1.351
	<b>t statistics</b>	0.826	1.252	1.541	1.183	3.661
<b>Ratio of shareholdings of the second, third and fourth largest shareholders to the largest shareholder</b>	<b>Coefficients</b>	<b>-0.323<sup>***</sup></b>	<b>-0.244<sup>**</sup></b>	<b>-0.364<sup>***</sup></b>	<b>-0.327<sup>**</sup></b>	<b>-0.393<sup>***</sup></b>
	<b>t statistics</b>	-2.751	-2.013	-3.115	-2.884	-3.515
<b>HHI-10</b>	<b>Coefficients</b>	<b>0.218<sup>*</sup></b>	<b>-0.095</b>	<b>-0.149</b>	<b>-0.055</b>	<b>-0.199<sup>*</sup></b>
	<b>t statistics</b>	1.710	-0.772	-1.220	-0.443	-1.707
<b>ROES</b>	<b>Coefficients</b>	<b>0.034</b>	<b>0.131</b>	<b>0.129</b>	<b>0.156</b>	<b>0.006</b>
	<b>t statistics</b>	0.289	1.036	1.037	1.183	0.049
<b>Rate of state shares</b>	<b>Coefficients</b>	<b>0.119</b>	<b>0.084</b>	<b>0.060</b>	<b>0.063</b>	<b>0.085</b>
	<b>t statistics</b>	1.129	0.781	0.546	0.567	0.817
<b>RPT</b>	<b>Coefficients</b>	<b>0.086</b>	<b>0.085</b>	<b>0.079</b>	<b>-0.074</b>	<b>-0.059</b>

	<b>t statistics</b>	0.793	0.763	0.709	0.655	-0.550
<b>Expense value</b>	<b>Coefficients</b>	<b>-0.091</b>	<b>-0.107</b>	<b>-0.104</b>	<b>-0.084</b>	<b>-0.306<sup>***</sup></b>
	<b>t statistics</b>	-0.850	-0.992	-0.965	-0.786	-2.985
<b>Adjusted R Square</b>		0.055	0.040	0.049	0.097	0.129
<b>Durbin-Watson</b>		1.941	2.014	2.153	2.111	1.726
<b>F Statistics</b>		<b>1.757<sup>*</sup></b>	<b>1.642<sup>*</sup></b>	<b>1.800<sup>*</sup></b>	<b>1.573</b>	<b>3.304<sup>***</sup></b>

**N.B.:** <sup>\*\*\*</sup>, <sup>\*\*</sup>, and <sup>\*</sup> indicate significant levels at 1%, 5%, and 10%, respectively.

#### 4.5 Result analysis

The empirical result has shown that the degree of restriction on the largest shareholder's controlling right/power (BOP) is high in a company, the company will have higher cross-border M&A performance of Chinese. But the result doesn't provide the adequate evidence to prove that other factors, ownership concentration (OCN), executive ownership (rate of executive shares) (ROES), and equity nature (status of SOE and POE of Chinese companies) (ENT), have the correlations with cross-border M&A performance of Chinese. This basically demonstrates that the internal actor of a Chinese company plays an important role in the company's M&A transaction in terms of the M&A performance, if the largest shareholder has relatively high controlling power in comparison to other large shareholders, the largest shareholder will be possible to lead a company to make the sensible M&A decision and the company will be more likely to be beneficial from the cross-border M&A transaction, showing a high M&A performance.

Normally, the stakeholder theory can basically explain why BOP can influence cross-border M&A performance without considering the difference of SOEs and POEs in the Chinese context, because the largest shareholder who controls the company in practice and has the absolute decision power will consider the interest of the company as its own interest, and M&A



is always considered as an important and effective strategy for bringing benefits to the company, thus he/she will do their best to make the right M&A decision. But, as it has been analysed in the former chapter, Chinese SOEs have the positive long-term cross-border M&A performance and the performance of Chinese POEs are contrary, showing a downward trend. So, stakeholder theory seems not sufficient and even incorrect to explain this situation in general. According to the stakeholder theory, the largest shareholder or a group of shareholders have the ultimate decision-making power. For large shareholders in Chinese POEs, they are indeed the decision makers, but in most Chinese SOEs, the largest shareholder or the true owner (State-owned Assets Supervision and Administration Commission of municipal government, provincial government, or central government) who is the stakeholder of the company actually doesn't make any decision regarding company's affairs. The decision-making power of the largest shareholder in Chinese is actually transferred to the executives from the actual controller according to the *Supervision and Administration of State-owned Assets of Enterprises Tentative Regulat* promulgated by the State Council of China on 27 May 2003 (revised in 2011 and 2019 respectively). In addition, the nature of executives in SOEs is different from it in POEs. The executives of Chinese POEs are generally the external personnel hired by the company and the agency problem in Chinese POEs can be well explained by the agency theory. But the executives in most Chinese SOEs are not the absolute external personnel. Unlike the ones in POEs, they are the government officials who are appointed to the SOEs to work as the executives by the Chinese Communist Party (Li, Zhang & Xie, 2020). Their official status is transferred into the corporate and when they are appointed back to the government position by the communist party, their status will be transferred to the governmental one again. Under this model, the motives for the executives in Chinese SOEs are mostly political-power-driven (Bai & An, 2021), that is to say when they have made great contribution to the company, bringing about huge benefits to the company, they will be nominated by the Chinese Communist Party to work in government with a much higher position than before. Then, the position as the executive in SOEs is a good place for official to be trained for a higher position in government (Huang, 2020). Therefore, in order to get promoted by the party, executives in SOEs are more willing to try their best to work for the benefits of the company than the executives in POEs whose motives are mostly benefit-driven. And the M&A decisions made by executives in SOEs are more possible to create huge benefits for the companies. Hence, both agency theory and stakeholder theory failed to explain the good performance of Chinese SOEs in term of cross-border M&A performance.

At the same time, the ownership of Chinese SOEs and POEs are generally concentrated in several large shareholders at the present stage of corporate reform (Ni, Hua & Wu, 2014), so the ownership concentration is a universal phenomenon in Chinese context. that's why the ownership concentration has been tested that not correlated to the cross-border M&A performance of Chinese companies under the selected data. But the largest shareholder of Chinese SOEs is State-owned Assets Supervision and Administration Commission of municipal government, provincial government, or central government, which are represented the control of the nation to the companies, and other large shareholders are unwilling to supervise the largest shareholder of the SOEs and executives of the SOEs because the supervision cost is too high, and they are afraid of being too much against the power of government. So, being free riders are more beneficial for them. Although the internal supervision mechanism is not effective for Chinese SOEs, Chinese Communist Party has established an extremely effective external supervision mechanism for SOEs. It is that the Communist Party committee participate in the corporate governance, and the committee is only responsible for the Chinese Communist Party and not restrained by the company. Because China governed by Communist Party, then the Communist Party committee, reflecting the authority and leadership of Chinese Communist Party, can directly supervise over the executives in SOEs who have the decision-making power and are sure to be the member of Chinese Communists party and all other personnel. Therefore, in Chinese SOEs, they have a complete and efficient supervision system. And, as aforementioned, decision makers in Chinese SOEs are not benefit-driven. So, the executives in Chinese SOEs can make scientific and meaning M&A decisions, and efficiently performed the high-quality M&A transactions. It is well explained why Chinese SOEs, whose largest shareholder has the absolute controlling power not restricted by other larger shareholders, but without decision-making power, and which don't have effective internal supervision system, can have positive upward-trend cross-border M&A performance in accordance with the confirmed hypothesis 1.

On the contrary, the largest shareholders in Chinese POEs can't make decision smoothly, because their controlling right/ power are restricted by the other shareholders. Unlike the other large shareholders in Chinese SOEs, other large shareholders are much more willing to use their ownership to restrict the largest shareholders for maximizing their benefits. In China, companies are benefit-driven, the large shareholders of Chinese POEs are more likely to be caught in the conflicts of interests with each other. For examples, some famous Chinese companies (Dangdang, NVC Lighting, Zhejiang Reclaim Holding Group, etc) are or were on

the verge of bankruptcy due to the internal conflicts between shareholders. In another word, the restriction on the largest shareholder's controlling right/power by other large shareholders leads to the consequence of the failure of internal corporate governance mechanism. And Chinese POEs doesn't have a strong external supervision mechanism that Chinese SOEs have. Therefore, even if the largest shareholder in Chinese POE has made a sensible M&A decision, other large shareholders may impede the M&A decision through the board of directors for their own interests. Or the largest shareholder makes the compromise with other shareholders to make M&A transactions which may be only beneficial to their own interest but bring about nothing even damage to the company and other small shareholders' interests. Then, it is well explained the impact of degree of controlling right/ power of the largest shareholder on the cross-border M&A performance from the perspective of Chinese POEs.

#### 4.6 Managerial and policy implications

Based on the empirical result and the analysis on the result, the paper is to provide suggestions for Chinese POEs and Chinese government of all levels.

At first, the suggestions for Chinese POEs. As it is analysed in the former part, the largest shareholders in Chinese POEs are generally restricted by other large shareholders, the very possible internal interest-driven conflicts between large shareholders in Chinese POEs lead to the consequence of the failure of the internal governance mechanism. Additionally, Chinese POEs don't have a sound and effective external supervision mechanism, both the behaviours of largest shareholder and other large shareholders, the decision-making group, are not supervised and restrained (Liao & Wu, 2021). Therefore, the cross-border transactions under the failed internal governance mechanism and the lack of external supervision can't really bring the benefits to the company and small shareholders, but more possibly create the benefits for the small group of large shareholders. Therefore, there are 3 suggestions proposed by the paper from the perspective of Chinese POEs for improving the decision-making efficiency in the cross-border M&A activities and the supervision efficiency:

(1) Relationship coordination. To coordinate the relationships between the largest shareholder and other large shareholders to avoid the excessive internal disputes of the self-interests and have the consensus about the cross-border M&A decisions.

(2) Optimisation of the ownership structure. The largest shareholder can increase his/her shareholdings for strengthening the controlling right/power, enhancing the decision-making power for all corporate affairs, especially in the cross M&A transactions, and by applying this the influence from other large shareholders on the decision-making process will be weakened. But this suggestion is based on that the largest shareholder is willing invest more capital for obtaining larger controlling right/power. Therefore, this suggestion can be effective, but costly as well.

(3) Improvement of the external supervision mechanism. To improve the decision-making efficiency based on the former two suggestions doesn't mean that the scientific and beneficial decisions can be made. Without the not benefit-driven supervision, the decision makers will highly possibly make the benefits for their own interests. Therefore, the paper suggests that the government should establish or improve the external supervision mechanism for the company. The concrete method is introduced in the suggestions for government part.

Secondly, the suggestions for government. Based on the empirical results and analysis, it is confident to say that Chinese government under the leadership of President Xi has successfully performed the reform on the Chinese SOEs at the new stage of economic reform since 2012. The sound decision-making mechanism and efficient corporate supervision mechanism has been established. At the same, with the participation of non-state capital in Chinese SOEs, the economic vitality of Chinese SOEs is simulated, and Chinese SOEs get more used to the competition under the market economy environment. That's why the M&A transactions made by Chinese SOEs can well change the companies' performance in a long run. Therefore, the paper proposes that:

(1) To deepen the reform of Chinese SOEs. At the present stage, the reform on Chinese SOEs doesn't cover the SOEs from all industries. The successful reform at the present stage has provided the best paradigm for the more profound and comprehensive corporate reform in the next stage after 2021. Therefore, Chinese can and must have the confidence to expand the scope of the reform on Chinese SOEs and realise the comprehensive reform and opening-up for Chinese economy.

(2) To promote the supervision mechanism of the Communist Party committee. Although the reform on SOEs is successful, the reform on Chinese POEs hasn't produced good results

in terms of cross-border M&As. The loose policies made by Chinese government for Chinese POEs doesn't bring about positive benefits for Chinese POEs. Some owners of Chinese POEs have even turned the enterprises and cross-border M&A transactions into a money laundering and asset transfer tools under the loose loan policy and regulatory policy (for instance, Wanda Group was punished by the Chinese government for allegedly transferring assets through cross-border M&A transactions). Therefore, it is urgent for the establishment of an external supervision mechanism while the failing of internal supervision mechanism in Chinese POEs. The supervision mechanism of the Communist Party committee in Chinese SOEs have been basically proved successful at present. Actually, according to *Company Law of the People's Republic of China*, Chinese company needs to establish an organization of the Chinese Communist Party (Party committee) to carry out party activities within the company in accordance with the provisions of the Constitution of the Chinese Communist Party, and the company should provide necessary conditions for the activities of the Party organization. Chinese SOEs have followed this law really well. However, for most Chinese POEs, they indeed have their companies' Party committee. But the company's Party committee is in a form of an empty shell, participants are only the internal personnel of the company, and the committee is under the leadership of the company. So, the external supervision mechanism becomes an ineffective internal supervision mechanism in Chinese POE. Therefore, the paper propose that Chinese government needs to assign the external party and government personnel to the company's Party committee to guide the supervision tasks. Then the external supervision mechanism can be really activated and improve Chinese POE's performance not only in terms of cross-border M&A, but also in broader aspects.

## 5. Conclusion

The paper has studied the impact of ownership structure on cross-border M&A performance of Chinese companies by comparing the different performance between Chinese SOEs and POEs at first and then testing the relationships between equity ownership and cross-border M&A performance, between the degree of restriction on the controlling right/power of the largest shareholder and cross-border M&A performance, between ownership concentration and cross-border M&A performance, and between executive ownership and cross-border M&A performance. The first empirical study by factor analysis shows that Chinese SOEs have an upward-trend performance by conducting cross-border M&A transactions, but Chinese POEs

have a smooth and slightly downward-trend M&A performance through cross-border M&A transactions. By conducting the regression analysis, the second empirical study shows that the degree of restriction on the controlling right/power of the largest shareholder is negatively correlated with cross-border M&A performance. Therefore, the largest shareholder can't make effective and efficient decision under the large ownership restriction from the other large shareholders. However, other selected variables are not consistently significant in the regression models, thus, there is no confidence to prove that these variables are correlated with cross-border M&A performance neither positively nor negatively.

By analysing the results from empirical studies, the paper offers practical managerial implications and policy suggestions for Chinese companies and Chinese government by taking the real cases in Chinese market and the real situation of Chinese corporate reform into consideration. The majority suggestions are for Chinese government.

However, there are still some limitations in the study. Firstly, there are many factors in ownership structure affecting cross-border M&A performance, then only by selecting few factors in ownership structure, the results of empirical studies can't 100% explain the relationships between ownership structure and cross-border M&A performance. Secondly, the paper doesn't take the different M&A destinations into consideration, which is largely possibly impacting the M&A performance between Chinese SOEs and POEs. So, by only explaining the different performance from the perspective of corporate reform, the result is limited to some extent. Thirdly, the paper is analysing the impact of ownership structure on cross-border M&A performance in Chinese context, so, considering the unique characteristic of Chinese market and the nature of Chinese government, the managerial implications and policy suggestions are limited and not suitable to companies and governments of other countries. Fourthly, the managerial implications and policy suggestions are mainly about the external factors on the Chinese companies that can improve the cross-border performance. Especially for Chinese POEs, under the failure of internal corporate governance mechanism, the external mechanism is suggested as the most efficient way to mitigate the negative impact from the internal factors. Therefore, the further study for offering the methods for improving the internal mechanism is necessary and worthy of note for future researchers.

## References

- Andres, C. (2008). Large shareholders and firm performance—An empirical examination of founding-family ownership. *Journal Of Corporate Finance*, 14(4), 431-445. doi: 10.1016/j.jcorpfin.2008.05.003
- Boateng, A., & Huang, W. (2016). Multiple Large Shareholders, Excess Leverage and Tunneling: Evidence from an Emerging Market. *Corporate Governance: An International Review*, 25(1), 58-74. doi: 10.1111/corg.12184
- Berle, A., & Means, G. (1933). The Modern Corporation and Private Property. *Virginia Law Review*, 20(1), 132. doi: 10.2307/1066523
- Breuer, W., Ghufuran, B., & Salzmann, A. (2018). National culture, managerial preferences, and takeover performance. *International Business Review*, 27(6), 1270-1289. doi: 10.1016/j.ibusrev.2018.05.008
- Bai, Y., & An, L. (2021). Ownership structure, budgetary slack and corporate performance. *Finance and accounting monthly*, 05, 56-64. doi: 10.19641/j.cnki.42-1290/f.2021.05.008.
- Chen, J., Zhao, X., Niu, X., Fan, Y., & Taylor, G. (2020). Does M&A Financing Affect Firm Performance under Different Ownership Types?. *Sustainability*, 12(8), 3078. doi: 10.3390/su12083078
- Dai, Y., & Li, X. (2021). Management Power Balance International and Adjustment Speed of Capital Structure: From the Perspective of Debt Constraint Effect. *Economic Management Journal*, 04,173-190. doi: 10.19616/j.cnki.bmj.2021.04.011.
- Du, M. (2021). Cross-Border M&A Performance of Chinese Enterprises in the Context of the Belt and Road Initiative. *Chinese Political Science Review*. doi: 10.1007/s41111-020-00173-y
- Eisenhardt, K. (1989). Agency Theory: An Assessment and Review. *Academy Of Management Review*, 14(1), 57-74. doi: 10.5465/amr.1989.4279003
- Edward Freeman, R., & Phillips, R. (2002). Stakeholder Theory: A Libertarian Defense. *Business Ethics Quarterly*, 12(3), 331-349. doi: 10.2307/3858020

- Freeman, R. Edward. (1984). *Strategic management: a stakeholder approach*. Boston: Pitman
- Freeman, R., & McVea, J. (2001). A Stakeholder Approach to Strategic Management. *SSRN Electronic Journal*. doi: 10.2139/ssrn.263511
- Freeman, R., Wicks, A., & Parmar, B. (2004). Stakeholder Theory and “The Corporate Objective Revisited”. *Organization Science*, 15(3), 364-369. doi: 10.1287/orsc.1040.0066
- Fukuda, A. (2020). The Effects of M&A on Corporate Performance in Japan: DID Analysis in the Era of Corporate Governance Reform. *Japan And The World Economy*, 55, 101013. doi: 10.1016/j.japwor.2020.101013
- Gao, W., Huang, Z., & Yang, P. (2019). Political connections, corporate governance and M&A performance: Evidence from Chinese family firms. *Research In International Business And Finance*, 50, 38-53. doi: 10.1016/j.ribaf.2019.04.007
- González-Torres, T., Rodríguez-Sánchez, J., Pelechano-Barahona, E., & García-Muiña, F. (2020). A Systematic Review of Research on Sustainability in Mergers and Acquisitions. *Sustainability*, 12(2), 513. doi: 10.3390/su12020513
- Guo, J., & Han, Y. (2021). Political connections, the ability of the acquirer, and the performance of Chinese private companies' M&A—Based on the perspectives of different target countries. *Journal of Chongqing Technology and Business University (Social Science Edition)*, 1-14.
- He, J., & Huang, Z. (2011). Board Informal Hierarchy and Firm Financial Performance: Exploring a Tacit Structure Guiding Boardroom Interactions. *Academy Of Management Journal*, 54(6), 1119-1139. doi: 10.5465/amj.2009.0824
- Huang, T. (2020). The Governance of State-owned Enterprises Based on the Agency Theory. *Assets and Finances in Administration and Institution*, 24, 37-38. doi: CNKI:SUN:XZSY.0.2020-24-019.
- Huang, D., Dong, Y., & Liu, X. (2020). The Difference between State-owned Enterprise Equity Incentive and Private Enterprise Equity Incentive under Agency Problem. *Urban Construction Theory Research*, 12, 57. doi: 10.19569/j.cnki.cn119313/tu.202012049.



- Hanelt, A., Firk, S., Hildebrandt, B., & Kolbe, L. (2020). Digital M&A, digital innovation, and firm performance: an empirical investigation. *European Journal Of Information Systems*, 30(1), 3-26. doi: 10.1080/0960085x.2020.1747365
- Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal Of Financial Economics*, 3(4), 305-360. doi: 10.1016/0304-405x(76)90026-x
- Jin, Y., Xu, M., Wang, W., & Xi, Y. (2020). Venture capital network and the M&A performance of listed companies. *China Finance Review International*, 11(1), 92-123. doi: 10.1108/cfri-02-2020-0016
- Kaspereit, T. (2020). Event Studies with Daily Stock Returns in Stata: Which Command to Use?. *SSRN Electronic Journal*. doi: 10.2139/ssrn.3743395
- Kar, R., Bhasin, N., & Soni, A. (2020). Role of mergers and acquisitions on corporate performance: emerging perspectives from Indian IT sector. *Transnational Corporations Review*, 1-14. doi: 10.1080/19186444.2020.1832427
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal Of Financial Economics*, 58(1-2), 3-27. doi: 10.1016/s0304-405x(00)00065-9
- Liu, Q., Luo, T., & Tian, G. (2017). How do political connections cause SOE s and non- SOE s to make different M&A decisions/performance? Evidence from China. *Accounting & Finance*, 59(4), 2579-2619. doi: 10.1111/acfi.12302
- Li, W., Wang, C., Ren, Q., & Zhao, D. (2020). Institutional distance and cross-border M&A performance: A dynamic perspective. *Journal Of International Financial Markets, Institutions And Money*, 66, 101207. doi: 10.1016/j.intfin.2020.101207
- Li, Q., Zhang, T., & Xie, Z. (2020). Thoughts on the Party Committee's Participation in the Governance of State-owned Enterprises. *Friends of Accounting*. 24, 108-111.
- Liao, Y., & Wu, Q. (2021). Internal Governance, Capital Structure and Early Warning of Financial Crisis in SMEs. *CO-Oerativeconomy & Science*, 02, 90-94. doi: 10.13665/j.cnki.hzjjykj.2021.02.036.

- McConnell, J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal Of Financial Economics*, 27(2), 595-612. doi: 10.1016/0304-405x(90)90069-c
- Marks, S. (1999). The separation of ownership and control. *Encyclopedia Of Law And Economics*. doi:10.4324/9781315744070-20
- MacKinlay, A. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature*, 35(1), 13-39. Retrieved March 24, 2021, from <http://www.jstor.org/stable/2729691>
- Ma, M., Sun, X., Waisman, M., & Zhu, Y. (2016). State ownership and market liberalization: Evidence from China's domestic M&A market. *Journal Of International Money And Finance*, 69, 205-223. doi: 10.1016/j.jimonfin.2016.07.004
- Moeini Gharagozloo, M., Nair, A., & Chen, C. (2020). The effect of the digital readiness of economies on international M&A performance. *Journal Of Enterprise Information Management, ahead-of-print*(ahead-of-print). doi: 10.1108/jeim-04-2020-0135
- Nguyen, T., Locke, S., & Reddy, K. (2015). Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter?. *International Review Of Financial Analysis*, 41, 148-161. doi: 10.1016/j.irfa.2015.06.005
- Ni, Z., Hua, J., & Wu, K. (2014). Is the "Going Global" Strategy of Chinese Enterprises Successful?—An Empirical Study on the Measurement of the Performance of Chinese Enterprises' Cross-border M&A and Its Influencing Factors. *Journal of International Trade*, 08, 156-166. doi: 10.13510/j.cnki.jit.2014.08.015.
- Panda, B., & Leepsa, N. (2017). Agency theory: Review of Theory and Evidence on Problems and Perspectives. *Indian Journal Of Corporate Governance*, 10(1), 74-95. doi: 10.1177/0974686217701467
- Prasadh, S., Thenmozhi, M., & Hu, M. (2020). Does economic freedom distance affect long-run post-acquisition performance and ownership level in cross-border acquisitions?. *DECISION*, 47(2), 191-213. doi: 10.1007/s40622-020-00246-6
- Ren, G., Zhou, X., Li, X., & Liu, L. (2021). The nature of property rights, corporate governance and corporate environmental behavior. *Journal of Beijing Institute of Technology (social sciences edition)*, 02, 44-55. doi: 10.15918/j.jbitss1009-3370.2021.5045.

Shleifer, A., & Vishny, R. (1986). Large Shareholders and Corporate Control. *Journal of Political Economy*, 94(3), 461-488. Retrieved April 21, 2021, from <http://www.jstor.org/stable/1833044>

Song, S., Zeng, Y., & Zhou, B. (2021). Information asymmetry, cross-listing, and post-M&A performance. *Journal Of Business Research*, 122, 447-457. doi: 10.1016/j.jbusres.2020.08.035

Tian, J., Shao, H., Chen, S., & Fan, X. (2021). Thoughts on Deepening the Reform of Governance Structure for Secondary Subsidiaries of State-Owned Key Enterprises——Based on the Survey of Three Large State-Owned Enterprises. *Special Zone Economy*, 04, 139-141. doi: CNKI:SUN:TAJJ.0.2021-04-037.

Uotila, J., Maula, M., Keil, T., & Zahra, S. (2009). Exploration, exploitation, and financial performance: analysis of S&P 500 corporations. *Strategic Management Journal*, 30(2), 221-231. doi: 10.1002/smj.738

Willers, Y., Yang, V., Yuan, S., Lee, D., & Luo, Y. (2015). Gearing Up for the New Era of China's Outbound M&A. *Boston Consulting Group*. Retrieved 10 February 2021, from <https://www.bcg.com/en-us/publications/2015/mergers-acquisitions-globalization-gearing-up-for-new-era-chinas-outbound-m-a>

Wang, Y. (2020). Research on the Relationship between the Ownership Structure of Listed Companies and M&A Performance. *China price*, 09, 41-44. doi: CNKI:SUN:ZGWJ.0.2020-09-013.

Xiao, M., Yang, X., & Li, G. (2020). M&A Short-Term Performance Based on Elman Neural Network Model: Evidence from 2006 to 2019 in China. *Complexity*, 2020, 1-15. doi: 10.1155/2020/8811273

Yang, M., & Deng, P. (2015). Cross-Border M&As by Chinese Companies in Advanced Countries: Antecedents and Implications. *Thunderbird International Business Review*, 59(3), 263-280. doi: 10.1002/tie.21767

Yang, M., & Ai, Q. (2021). The post-acquisition performance of cross-border mergers and acquisitions conducted by Chinese firms in the high-tech industries: Profitable or innovative?. *Thunderbird International Business Review*. doi: 10.1002/tie.22192

Zhou, C., Xie, J., & Wang, Q. (2016). Failure to Complete Cross-Border M&As: “To” vs. “From” Emerging Markets. *Journal Of International Business Studies*, 47(9), 1077-1105. doi: 10.1057/s41267-016-0027-y

## Appendix

### Appendix: Processed data of companies' information

Stock_code	FinishDate	Buyer_Chinese	Buyer_en	Underlying_en
000065	2018-11-07	北方国际合作股份有限公司	NORINCO International Cooperation Ltd.	Croatia Energy Engineering Co., Ltd.
000333	2016-07-01	国际控股有限公司	Midea International Corporation Company Limited	Toshiba Lifestyle Products & Services Corporation
000553	2017-07-07	湖北沙隆达股份有限公司	Hubei Sanonda Co., Ltd.	ADAMA Agricultural Solutions Ltd.
000639	2016-11-02	西王食品股份有限公司	Xiwang Foodstuffs Co., Ltd.	Kerr Investment Holding Corp.
000681	2018-04-19	华夏视觉(天津)信息技术有限公司	Huaxia Vision (Tianjin) Information Technology Co., Ltd.	Unity Glory International Limited
000718	2015-08-07	苏宁环球传媒有限公司	Suning Universal Media Co., Ltd.	Redrover Co., Ltd.
000811	2015-08-11	烟台冰轮股份有限公司	Yantai Moon Co., Ltd.	Yantai Moon Group (Hong Kong) Limited
000901	2016-11-05	航天科技控股集团股份有限公司	Aerospace Hi-Tech Holding Group Co., Ltd.	Iee International Electronics & Engineering S.A.
000923	2017-07-25	河北宣化工程机械股份有限公司	Hebei Xuanhua Construction Machinery Co., Ltd.	Smart Union Resources (Hong Kong) Co., Limited
000930	2018-11-13	中粮生物化学(安徽)股份有限公司	COFCO Biochemical (Anhui) Co., Ltd.	COFCO Biofuel Holdings Limited, COFCO Biochemical Holdings Limited, Widepower Investments Limited
002019	2016-07-01	亿帆鑫富药业股份有限公司	Yifan Xinfu Pharmaceutical Co., Ltd.	DHY & Co., Ltd.
002024	2016-01-04	Great Sunrise Limited	Great Sunrise Limited	Pplive Corporation
002044	2016-10-19	美健有限公司	Meijian Co., Ltd.	Xin Xin Healthcare Holding Limited

002079	2018-12-29	苏州固锝电子股份有限公司	Suzhou Good-Ark Electronics Co., Ltd.	AIC Semiconductor Sdn. Bhd.
002086	2016-02-16	山东东方海洋科技股份有限公司	Shandong Oriental Ocean Sci-tech Co., Ltd.	Avioq, Inc.
002151	2017-09-22	北斗星通(重庆)汽车电子有限公司	BDStar (Chongqing) Auto Electronic Co., Ltd.	in-tech GmbH
002153	2015-07-08	焦点信息技术(香港)有限公司	Focus Information Technology Co., Limited	Ke Chuan Holding Co., Limited
002180	2015-07-22	珠海艾派克科技股份有限公司	Zhuhai APEX Technology Co., Ltd.	Static Control Components, Inc.
002185	2015-04-04	天水华天科技股份有限公司	Tianshui Huatian Technology Co., Ltd.	FlipChip International, LLC and its Subsidiaries
002203	2016-04-08	浙江海亮股份有限公司	Zhejiang Hailiang Co., Ltd.	JMF Company
002228	2018-06-06	厦门合兴包装印刷股份有限公司	Xiamen Hexing Packaging Printing Co., Ltd.	United Creation Packaging Solutions (Asia) Pte Ltd.
002239	2015-10-09	南京奥特佳新能源科技有限公司	Nanjing Aotecar New Energy Technology Co., Ltd.	Aits US Inc., Air International Thermal (Luxembourg) S.à r.l., Air International Thermal (Belgium)
002273	2014-12-23	浙江水晶光电科技股份有限公司	Zhejiang Crystal-Optech Co., Ltd.	Optorun Co., Ltd.
002280	2015-05-09	数字天域(香港)科技有限公司	Digital Grid (Hong Kong) Technology Co., Limited	Go2Play Limited
002324	2015-02-17	上海翼鹏投资有限公司	Shanghai Yipeng Investment Co., Ltd.	WPR Holdings LLC, Wellman Plastics Recycling LLC, D.C. Foam Recycle Incorporated
002345	2014-07-05	潮宏基国际有限公司	CHJ International Limited	FION Co., Ltd.
002354	2015-10-28	大连科冕木业股份有限公司	Dalian Kemian Wood Industry Co., Ltd.	Avazu Inc.

002381	2016-04-01	浙江双箭橡胶股份有限公司	Zhejiang Double Arrow Rubber Co., Ltd.	International Conveyor Products Pty Limited
002382	2018-05-16	蓝帆医疗股份有限公司	Blue Sail Medical Co., Ltd.	CB Cardio Holdings II Limited
002383	2016-10-11	广州思拓力测绘科技有限公司	Guangzhou Stonex Surveying and Mapping Technology Co., Ltd.	Stonex s.r.l.
002384	2014-04-01	香港东山精密联合光电有限公司	Hong Kong Dongshan Precision Union Opoelectronic Co., Limited	Mutto Optronics Group Limited
002399	2014-04-11	深圳市海普瑞药业股份有限公司	Shenzhen Hepalink Pharmaceutical Co., Ltd.	SPL Acquisition Corp.
002448	2017-04-01	中原内配集团股份有限公司	ZYNP Corporation	Incodel Holding LLC
002464	2015-10-19	SPC	SPC	MMOGA Limited
002466	2016-11-05	天齐锂业股份有限公司	Tianqi Lithium Corporation	Sociedad Quimica y Minera S.A.
002486	2014-12-15	上海嘉麟杰纺织品股份有限公司	Shanghai Challenge Textile Co., Ltd.	Masood Textile Mills Limited
002505	2016-12-21	纽仕兰(上海)乳业有限公司	Milk New Zealand (Shanghai) Co., Ltd.	An Yuan Dairy Ltd.
002520	2015-08-06	浙江日发精密机械股份有限公司	Zhejiang Rifa Precision Machinery Co., Ltd.	Machining Centers Manufacturing S.p.A
002554	2014-12-02	香港惠华环球科技有限公司	Hong Kong Huihua Global Technology Limited	Pan-China Resources Ltd.
002611	2015-10-24	广东东方精工科技股份有限公司	Guangdong Dongfang Precision Science & Technology Co., Ltd.	Ferretto Group S.p.A.
002635	2014-11-29	苏州安洁科技股份有限公司	Suzhou Anjie technology Co., Ltd.	Supernova Holdings (Singapore) Pte. Ltd.
002637	2016-09-05	浙江赞宇科技股份有限公司	Zhejiang Zanyu Technology Co., Ltd.	PT. Dua Kuda Indonesia

002646	2015-09-01	青海互助青稞酒股份有限公司	Qinghai Huzhu Barley Wine Co., Ltd.	Napa Chiles Valley Winery
002658	2015-09-07	北京雪迪龙科技股份有限公司	Beijing SDL Technology Co., Ltd.	Kore Technology Limited
002675	2016-10-18	烟台东诚药业集团股份有限公司	Yantai Dongcheng Pharmaceutical Group Co., Ltd.	Sino Siam Biotechnique Co., Ltd.
002698	2017-06-29	哈尔滨博奥环境技术有限公司	Harbin Boao Environmental Technology Co., Ltd.	P&P Industrietechnik GmbH
002701	2016-10-20	奥瑞金包装股份有限公司	ORG Packaging Co., Ltd.	AJA Football S.A.O.S.
002727	2016-03-19	云南鸿翔中药科技有限公司	Yunnan Hongxiang Chinese Medicine Technology Co., Ltd.	Kingsway Trading Incorporated
002833	2018-04-09	弘亚数控(香港)有限公司	KDT MAC (Hong Kong) Limited	Masterwood S.p.A.
300015	2017-08-09	爱尔眼科国际有限公司	Aier Eye International, Sl.	Clinica Baviera, S.A.
300017	2017-06-24	网宿科技股份有限公司	Wangsu Science & Technology Co., Ltd.	CDNetworks Co., Ltd.
300043	2015-02-10	广东星辉投资有限公司	Guangdong Xinghui Investment Co., Ltd.	Rastar Synthetic Material (HK) Company Limited
300056	2018-07-04	厦门三维丝国际物流有限责任公司	Xiamen Savings International Logistics Co., Ltd.	Hong Kong Sanweisi Internantional Logistics Co., Limited
300058	2015-09-01	蓝色光标(上海)投资管理有限公司	BlueFocus (Shanghai) Investment Management Co., Ltd.	Domob Limited
300061	2017-06-02	上海康耐特光学股份有限公司	Shanghai Conant Optics Co., Ltd.	Asahi Lite Holdings Limited
300166	2015-07-10	北京东方国信科技股份有限公司	Business-intelligence of Oriental Nations Corporation Ltd.	Cotopaxi Limited



300175	2016-03-23	朗源股份有限公司	Lontrue Co., Ltd.	Cloudrider Limited
300209	2015-04-21	天泽信息产业股份有限公司	Tianze Information Industrial Inc.	MBP Software Group Limited
300218	2018-02-09	安徽安利材料科技股份有限公司	Anhui Anli Material Technology Co., Ltd.	Anli Rus, LLC
300252	2015-04-08	深圳金信诺高新技术股份有限公司	Kingsignal Technology Co., Ltd.	PC Specialties-China, L.L.C
300262	2017-02-13	上海赛夫邦投资有限公司	Shanghai Safbon Investment Co., Ltd.	Larive Water Holding AG
300278	2015-02-26	湖北华昌达智能装备股份有限公司	Hubei Huachangda Intelligent Equipment Co., Ltd.	Dearborn Mid-West Company, LLC
300363	2017-04-17	重庆博腾制药科技股份有限公司	Porton Fine Chemicals Ltd.	J-STAR Research, Inc.
300387	2017-08-03	湖北富邦科技股份有限公司	Hubei Forbon Technology Co., Ltd.	PST Industries
300388	2016-03-01	安徽国祯环保节能科技股份有限公司	Anhui Guozhen Environment Protection Technology Joint Stock Co., Limited	Goodtech Environment AS
300418	2016-11-04	北京昆仑万维科技股份有限公司,奇虎三六零软件(北京)有限公司,金砖丝路基金管理(深圳)合伙企业(有限合伙)	Beijing Kunlun Tech. Co., Ltd., Qihoo 360 Software (Beijing) Co., Ltd., Golden Brick Silk Road Fund Management (Shenzhen) LLP	Opera Software ASA
300419	2016-09-01	北京浩丰创源科技股份有限公司	Beijing Interact Technology Co., Ltd.	Jupiter Consulting (Beijing) Ltd.

300459	2018-04-20	浙江金科文化产业股份有限公司	Zhejiang Jinke Culture Industry Co., Ltd.	United Luck Group Holdings Limited
300464	2018-04-24	广东星徽精密制造股份有限公司	Guangdong SACA Precision Manufacturing Co., Ltd.	Donati
300466	2017-11-23	徐州赛斯特科技有限公司	Xuzhou Saisite Technology Co., Ltd.	Epistolio S. r. l.
300512	2018-06-15	杭州中亚科创投资有限公司	Hangzhou Zhongya Kechuang Investment Co., Ltd.	Magex SRL
300545	2018-08-13	深圳市联得自动化装备股份有限公司	Shenzhen Liande Automation Equipment Co., Ltd.	HUA YANG Precision Machinery Co., Ltd.
600073	2016-12-10	上海梅林(香港)有限公司	Shanghai Maling (Hong Kong) Ltd.	Silver Fern Farms Beef Limited
600097	2016-06-14	上海开创远洋渔业有限公司	Shanghai Kaichuang Deep Sea Fisheries Co., Ltd.	Hijos de Carlos Albo, S.L.
600146	2016-10-11	宁夏大元化工股份有限公司	Ningxia Dayuan Chemical Co., Ltd.	Oneworld Star International Holdings Limited
600196	2017-10-09	上海复星医药(集团)股份有限公司下属联合收购方	Joint Acquirer Subordinate to Shanghai Fosun Pharmaceutical (Group) Co., Ltd.	Gland Pharma Limited
600258	2016-10-18	北京首旅酒店(集团)股份有限公司	BTG Hotels (Group) Co., Ltd.	Poly Victory Investments Limited
600270	2015-05-27	中外运空运发展股份有限公司	Sinotrans Air Transportation Development Co., Ltd.	China Interocean Transport Inc.
600337	2018-03-20	美克国际事业贸易有限公司	Markor International Trade Co., Ltd.	M.U.S.T. Holdings Limited
600469	2016-10-27	风神轮胎股份有限公司	Aeolus Tyre Co., Ltd.	Pirelli Industrial S.r.l.

600558	2016-09-28	四川大西洋焊接材料股份有限公司	Atlantic China Welding Consumables, Inc.	Vietnam Atlantic Welding Material Co., Ltd.
600570	2017-10-10	恒生电子股份有限公司	Hundsun Technologies Inc.	DZH (HK) Investment Holding Company Limited
600682	2014-09-06	南京新街口百货商店股份有限公司	Nanjing Xinjiekou Department Store Co., Ltd.	Highland Group Holdings Limited
600754	2016-02-27	上海锦江国际酒店发展股份有限公司	Shanghai Jinjiang International Hotel Development Co., Ltd.	Keystone Lodging Holdings Limited
600759	2015-08-14	洲际油气股份有限公司	Geo-Jade Petroleum Corporation	Kozhan Joint-Stock Company
600777	2016-08-10	烟台新潮实业股份有限公司	Yantai Xinchao Industrial Co., Ltd.	Blue Whale Energy North America Corporation
600886	2016-05-24	国投电力控股股份有限公司	SDIC Power Holdings Co., Ltd.	Repsol Nuevas Energias UK Limited
601717	2017-03-04	郑州煤矿机械集团股份有限公司	Zhengzhou Coal Mining Machinery Group Co., Ltd.	CACG Ltd. I
601727	2016-10-22	上海电气香港有限公司	Shanghai Electric Hong Kong Co., Limited	TEC4AERO GmbH
603085	2018-07-13	浙江天成自控股份有限公司	Zhejiang Tiancheng Controls Co., Ltd.	Acro Holdings Limited
603222	2016-09-01	浙江济民制药股份有限公司	Zhejiang Chimin Pharmaceutical Co., Ltd.	Linear Chemicals S.L.
603611	2017-08-29	诺力机械股份有限公司	Noblelift Equipment Joint Stock Co., Ltd.	Noblelift Holding Singapore Pte. Ltd.
603766	2017-01-21	隆鑫通用动力股份有限公司	Loncin Motor Co., Ltd.	C.M.D Costruzioni Motori Diesel S.p.A.
603808	2018-11-08	东明国际投资(香港)有限公司	East Light International Investment (Hong Kong) Limited	Tangli International Holdings Limited

Stock\_code

EquityNatureID MajorRestructuringSign RelevanceSign

000065	1	0	0
000333	0	0	0
000553	1	1	1
000639	0	1	0
000681	0	0	1
000718	0	0	0
000811	1	1	1
000901	1	1	1
000923	1	1	1
000930	1	1	1
002019	0	0	0
002024	0	0	1
002044	0	0	0
002079	0	0	0
002086	0	0	0
002151	0	0	0
002153	0	0	0
002180	0	1	0
002185	0	0	0
002203	0	0	0
002228	0	0	1
002239	0	1	0
002273	0	0	0
002280	0	0	0
002324	0	1	0
002345	0	0	0
002354	0	1	1
002381	0	0	0
002382	0	1	1
002383	0	0	0
002384	0	0	0
002399	0	0	0
002448	0	0	0
002464	0	1	0
002466	0	0	0
002486	0	0	0
002505	0	0	1
002520	0	1	0
002554	0	0	0
002611	0	0	0
002635	0	1	0
002637	0	0	0
002646	0	0	0
002658	0	0	0
002675	0	0	0
002698	0	0	0

002701	0	0	0
002727	0	0	0
002833	0	0	0
300015	0	0	0
300017	0	1	0
300043	0	1	1
300056	0	0	0
300058	0	0	0
300061	0	0	0
300166	0	0	0
300175	0	0	0
300209	0	1	0
300218	0	0	0
300252	0	0	0
300262	0	0	0
300278	0	1	0
300363	0	0	0
300387	0	0	0
300388	0	0	0
300418	0	0	0
300419	0	0	0
300459	0	0	0
300464	0	0	0
300466	0	0	0
300512	0	0	0
300545	0	0	0
600073	1	1	0
600097	1	1	0
600146	0	0	0
600196	0	0	0
600258	1	1	1
600270	1	0	1
600337	0	0	0
600469	1	0	1
600558	1	0	1
600570	0	0	0
600682	0	1	0
600754	1	1	0
600759	0	1	0
600777	0	0	0
600886	1	0	0
601717	1	1	0
601727	1	0	0
603085	0	0	1
603222	0	0	0
603611	0	0	0

603766	0	0	0
603808	0	0	1

Stock_code	ExpenseValue	log(ExpenseValue)	Hierarchy_en
000065	250359595.2	8.398564241	State-owned Enterprise
000333	3089361000	9.48986866	
000553	18471006998	10.26649057	State-owned Enterprise
000639	4875378000	9.688008293	
000681	525395000	8.720485935	
000718	62614544.05	7.796675222	
000811	211359400	8.325021567	Municipal State-owned Enterprise
000901	1419694000	9.152194747	State-owned Enterprise
000923	3097556500	9.491019237	Provincial State-owned Enterprise
000930	8284728000	9.918278254	Central Enterprise
002019	1000680000	9.00029522	
002024	2587993100	9.412963114	
002044	181763632.4	8.259506993	
002079	5840000	6.766412847	
002086	450000000	8.653212514	
002151	456822000	8.659747011	
002153	81747000	7.912471824	
002180	390919888.6	8.592087766	
002185	249206898.2	8.39656006	
002203	196878000	8.294197189	
002228	718000000	8.856124444	
002239	857170000	8.933066963	
002273	119272797.6	8.076541406	
002280	18586500	7.269197616	
002324	433330000	8.636818757	
002345	177600000	8.249442961	
002354	2070000000	9.315970345	
002381	11272000	7.05200098	
002382	3843089400	9.584680487	
002383	41508708	7.618139216	
002384	308193000	8.48882277	
002399	1368862700	9.13635989	
002448	665804920	8.823347	
002464	2184000000	9.339252634	
002466	1397148990	9.145242721	
002486	170866311.3	8.232656444	
002505	249730200	8.397471065	
002520	108451200	8.035234362	
002554	510443200	8.707947423	

002611	39508184	7.596687068	
002635	819810000	8.913713212	
002637	530000000	8.72427587	
002646	807.079	2.906916047	
002658	12593900	7.100160241	
002675	315000000	8.498310554	
002698	71191000	7.852425093	
002701	52031700	7.716268016	
002727	12452410	7.095253412	
002833	124000000	8.093421685	
300015	1111454400	9.045891649	
300017	1281972700	9.107878777	
300043	51835400	7.714626454	
300056	813400	5.910304168	
300058	1094060000	9.03904114	
300061	71247711.13	7.852770917	
300166	170140000	8.230806428	
300175	0	0	
300209	149210000	8.17379793	
300218	13644018.6	7.134942303	
300252	110600000	8.043755127	
300262	59066400	7.771340502	
300278	329158800	8.51740547	
300363	180692200	8.256939406	
300387	120000000	8.079181246	
300388	34729000	7.540692278	
300418	7814160000	9.892882299	
300419	27000000	7.431363764	
300459	643915812.5	8.80882909	
300464	22013880	7.342696595	
300466	26467624.97	7.422714972	
300512	8285714.29	6.918329954	
300545	14160856.32	7.151089516	
600073	1255040500	9.098657741	Municipal State-owned Enterprise
600097	415262510.8	8.618322725	Municipal State-owned Enterprise
600146	1880000000	9.274157849	
600196	6020642231	9.779642821	
600258	1714000000	9.234010818	Municipal State-owned Enterprise
600270	4967500	6.696137876	State-owned Enterprise
600337	31897344	7.503754522	
600469	521995987.4	8.717667165	State-owned Enterprise Municipal State-owned Enterprise
600558	4451850	6.648540523	
600570	367200000	8.564902673	

600682	1562255800	9.193752146	Municipal State-owned Enterprise
600754	8269373030	9.917472583	
600759	2139445000	9.330301126	
600777	200000000	8.301029996	State-owned Enterprise Provincial State-owned Enterprise
600886	1691682300	9.228318805	
601717	499200000	8.698274577	Municipal State-owned Enterprise
601727	1286717379	9.109483167	
603085	480000000	8.681241237	
603222	36620220	7.563720949	
603611	6.7451	0.828988393	
603766	180927450	8.257504462	
603808	154000000	8.187520721	