The Impact of Payment Methods on M&As Performance: Evidence from China

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This dissertation is submitted in partial fulfilment of the requirements of the MSc Finance

10/21/2021

Abstract

This dissertation analyses the impact of cash and stock payments on firms' M&A performance using the sample of M&A events of listed firms in China in 2019. The results show that whichever payment method is chosen can improve a firm's short-term M&A performance. Stock payment has a greater effect on short-term performance enhancement. For long-term M&A performance, cash payments are significantly better than stock payments. However, the use of event studies in this dissertation as the research method for analysing short-term M&A performance may not be applicable to the Chinese market. The results should therefore be interpreted with this in consideration.

Declarations

DECLARATION

This work has not previously been accepted in substance for any degree and is not being currently submitted in candidature for any degree.

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STATEMENT 1

This work is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s).

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Acknowledgments

The dissertation is a big project, for which I spent a lot of time and effort. From topic selection to the final completion, I encountered many hardships and also received a lot of support and help. The first one to thank is my supervisor, Professor Hussein. His advice and feedback is helpful in improving the quality of my dissertation. Finally, I would like to thank my family for being there for me throughout this time. Hope all goes well next.

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CHAPTER 1 INTRODUCTION

1.1 Motivation

In addition to natural incremental growth, mergers and acquisitions (M&A) can be an effective way of enabling companies to grow and develop rapidly. The benefits of M&A are self-evident. Through M&A, companies can absorb advanced technology and talent, integrate upstream and downstream resources and expand their market share. Successful M&A not only increases the scale of a company, but also allows for better integration of internal resources and synergies. There are numerous M&A's around the world every year, but not all of them bring benefits to companies. On the contrary, most of them do not achieve the expected goals, and some of them even create potential problems for the future development of the company. Many scholars have conducted analytical studies from different perspectives in an attempt to find out the factors that influence M&A performance. Hutzschenreuter et al. (2012) review a large body of literature and conclude that the environment, the features of the deal and the experience of the company all influence M&A performance. a large body of literature suggests that the post-merger performance of firms that choose to pay for M&A deals in different ways also differs. Therefore, the method of payment can be used as an entry point to analyse to M&A performance. Much research has been conducted on the more developed capital markets. However, the incidence of M&A in developing countries has not been adequately studied. In contrast to the long history of M&A in developed markets, M&A in China began in the 1990s, just over 30 years ago. With the development of capital markets and related laws and regulations, M&A in China has become more regulated over the decades. This thesis therefore focuses on the situation in China, an emerging developing country. Most scholars of developed markets have studied this topic using an event study focusing on the short-term impact effects. However, most studies analysing M&A events in the Chinese market have focused on the long-term effects on firm performance. Few scholars have analysed both long-term and short-term performance. This dissertation argues that payment methods do not have the same impact on long-term and short-term M&A performance. Therefore, this dissertation considers both long-term and short-term performance in its research of this topic, resulting in a more comprehensive conclusion.

1.2 Research questions and objectives

Question: What is the relationship between payment methods and M&A performance of Chinese firms?

Objective:

To analyse the impact of payment method on the long-term M&A performance of firms

To analyse the impact of payment methods on the short-term M&A performance of firms

1.3 Structure

Chapter 2 focuses on the organisation and analysis of relevant research on this topic. To achieve strategic objectives and synergies through M&A, companies must pay the corresponding price. Choosing the appropriate and reasonable payment method is crucial. The method of payment is not only a simple tool for settlement, it also has a very important impact on the subsequent development of the enterprise. This dissertation firstly compares the advantages and disadvantages of two different payment methods, namely cash payment and stock payment. Cash payment is simple and quick, and is the most popular method of payment chosen by listed companies in China. However, this method requires the use of a large amount of capital reserves, which may pose a risk of capital shortage for the subsequent operation of the enterprise. Equity payment is a good way to circumvent this problem. But it may have an impact on the shareholders' ownership interests and even cause them to lose control of the company. Therefore, when choosing a payment method, companies should take into account the characteristics of different payment methods to choose the most suitable one. In many cases, the choice of payment method is not arbitrary. Some companies choose a payment method based on the purpose of the acquisition. Others have to make trade-offs due to limited resources. Their choice is not based on which method is best, but rather on how to choose the most appropriate one given their limited resources. A company's capital reserves place significant constraints on the choice of payment method. Companies that generally choose to pay in cash tend to have a large amount of cash. They therefore do not disrupt their day-to-day operations when spending a large sum of money at short notice. Cash payments tend to be less common in transactions involving larger amounts of money. Concentration of shareholding is also an important factor in the choice of payment method. In companies with a high degree of equity concentration, the majority shareholders are often concerned about their ability to control the company. If payment is made in shares it can dilute their shareholding and even cause them to lose control of the company. However, equity payments can also spread the risk to the shareholders of the target company. The degree of information asymmetry can also affect a firm's choice

of payment method. There is no academic agreement on the impact of payment method on M&A performance. This dissertation summarises previous research to draw two hypotheses. H1: Cash payments outperform equity payments in the short term. H2: Equity payments outperform cash payments in the long term.

Chapter 3 discusses how this dissertation conducts research on the impact of payment methods on M&A performance. The analysis of performance in this dissertation is divided into two parts, long term performance and short term performance. Therefore, the short-term performance is examined using the event study method, while the long-term performance is analysed using the accounting research method. The analysis of the two separately leads to a comprehensive conclusion on the impact of payment methods on M&A performance. The first is the selection of the sample. M&A events that occurred in the Chinese market in 2019 were selected for the research. The sample was selected based on certain criteria in order to ensure the feasibility of the study and to exclude the interference of irrelevant factors. The final sample of 107 long-term performance and 85 short-term performance samples that met the requirements was obtained. The next step is the definition and measurement of the variables. The explanatory variable in this dissertation is payment method and the explained variable is M&A performance. However, different indicators were used to represent long-term performance and short-term performance in separate studies. The first is short-term performance. This dissertation uses the event study to examine short-term performance and therefore the cumulative abnormal returns, CAR, within the event window will be used as the explained variable to represent short-term M&A performance. Secondly, long-term performance. The research on long-term M&A performance with firms is mainly based on accounting data. This is because these data are more reflective of a firm's operating conditions. Many studies have chosen purely accounting indicators to represent long-term performance, such as return on total assets. However, there are some drawbacks to this type of data. These data are basically derived from the financial statements in the company's annual report. Therefore, there is more room for manipulation by managers and the credibility is limited. In this dissertation, Tobin's Q is chosen to represent the long-term performance of a company. The difference between Tobin's Q in the year before the acquisition and the year of the acquisition and the year after the acquisition, respectively, is taken as the long-term acquisition performance. This indicator contains both accounting and market information that reflects the operations of the firm. It therefore provides a better picture of the long-term performance

of the firm. There are a variety of factors that influence M&A performance. In order to better analyse the relationship between the explanatory variable payment method and the explained variable M&A performance, four control variables are introduced for analysis. They are return on total assets, financial leverage, market-to-book ratio and the shareholding ratio of the largest shareholder. Finally, a multiple linear regression equation consisting of M&A performance, payment method, return on total assets, financial leverage, market-to-net ratio and shareholding ratio of the largest shareholder is constructed. The correlation coefficients and significance of the explanatory and control variables are tested to draw conclusions.

Chapter 4 focuses on the statistical analysis of the sample data and draws conclusions. It was found that positive cumulative abnormal returns were achieved regardless of whether cash or equity payments were chosen. This means that the takeover event will have a wealth effect on the firm regardless of the payment method used. However, the short-term performance of equity payments is significantly better than that of cash payments. This conflicts with the literature review which suggests that cash payments generate more returns in the short run. This may be due to the limitations of signalling theory in explaining the Chinese market.

Chapter 4 focuses on the statistical analysis of the sample data and draws conclusions. It was found that positive cumulative abnormal returns were achieved regardless of whether cash or equity payments were chosen. This means that the takeover event will have a wealth effect on the firm regardless of the payment method used. However, the short-term performance of equity payments is significantly better than that of cash payments. This conflicts with the literature review which suggests that cash payments generate more returns in the short run. This may be due to the limitations of signalling theory in explaining the Chinese market. Another possible reason is that equity payments convey that both parties to an M&A are confident about the future growth of the new firm. Thus, investors show positive feedback. In analysing long-term M&A performance, this dissertation concludes that cash payments are positively related to firms' long-term M&A performance, meaning that firms that choose cash payments have improved long-term performance in the year after the M&A took place. However, the effect of payment method on long-term M&A performance was not significant in the year in which the M&A took place. The findings on long-term performance are also inconsistent with the literature review. This paper attempts to suggest that a possible reason for this is that the latter year of the M&A coincided with the spread of the Covid-

19. Firms that choose to pay in cash tend to have sufficient capital reserves. They are therefore more resilient to risk. So the long term performance of cash payments remains slightly increase in that year.

Chapter 5, the final chapter of this dissertation, summarises the findings of the dissertation and analyses the limitations of the research. It also provides some references and suggestions for further research. Firstly, the small sample size of this paper may be an important reason why the findings of the study are not consistent with the hypothesis of the literature. Secondly, the event study method is controversial when used to study the Chinese market. The credibility of the findings regarding short-term M&A performance is therefore also compromised. Thirdly, the sample data period collected for this thesis included the particular year of 2020. The worldwide economic downturn brought about by the Covid-19 epidemic will also affect the findings of this dissertation. Finally, the measurement of long-term performance and the choice of control variables may not be fully representative of the research population. Further research could therefore learn from these experiences to make the research more accurate and credible. Further research could also extend the research to the worldwide context. The choice of payment method and its impact on the capital markets of different countries could be analysed.

CHAPTER 2 LITERATURE REVIEW

The choice of payment method is fundamentally a function of how the company intends to gain control of the target company. Different payment methods can also have different effects on the company based on their own characteristics. This dissertation focuses on cash payments and equity payments, two of the most academically discussed and popular payment methods in the Chinese capital market. A comparative analysis of the advantages and disadvantages of the two payment methods allows for a better understanding of their own characteristics, which is an important reference for companies when choosing a payment method. At the same time, the choice of payment method is limited by the company's own circumstances. The final decision on the payment method will also take into account the company's own resources, the business environment in which it operates and the objectives it wants to achieve. An analysis of a company's choice of payment method from these perspectives can better explain the impact that different payment methods may have on a company.

2.1 Comprehensive evaluation of cash and equity payments

Cash payment is a basic and primitive form of payment, the process is similar to going to the supermarket and buying an apple. Cash payments are common in M&A activities because they are clear and straightforward. This payment is completed when the acquirer transfers the mutually determined amount in cash or cash equivalents to the account of the acquiree. This process is relatively simple and efficient and can therefore help facilitate the acquisition process in hostile takeovers. From the acquirer's perspective, cash payments are generally quicker, which leaves the target company insufficient time to take countermeasures. It also provides a defence against potential competitors. Potential rivals may be unable to raise large amounts of capital at short notice and give up the competition, which greatly increases the likelihood that the acquirer will be successful in obtaining the target business. This view is confirmed by Berkovitch and Narayanan (1990) who argue that cash offers ensure high synergy value for the acquirer in competitive bidding because of its speed and low latency. For the target company, a cash payment also has significant advantages. A cash acquisition allows the target company to obtain a large amount of cash capital in a short period of time without having to take on securities risk. This means that the cash received is the all that the original shareholders of the target company will receive in the transaction. It does not

matter how well or poorly the new company will do after the merger. Huang et al. (2016) analyse from a risk mitigation perspective and conclude that the frequency of use of cash payments is higher in cross-border M&A cases compared to domestic M&A because of the higher risk faced in cross-border transactions. This type of payment has no impact on the capital structure of the post-acquisition company and is therefore less likely to lead to share price volatility. However, there are certain financial thresholds for cash payments. Cash payments often place high demands on the acquirer's cash reserves. The outflow of large amounts of cash in a short period of time is a heavy burden, which is likely to affect the acquirer's daily operations. In addition, cash payments do not allow the target company to benefit from tax advantages. This is because cash payments do not enable them to defer the recognition of capital gains, thus bringing forward the timing of taxation.

Equity payments are forms of payment where the acquirer pays for a transaction by issuing additional new shares or using equity or shares in its holding company in order to acquire equity or assets in the target company. Equity payments do not require the use of the company's cash reserves. Therefore, it can avoid a large amount of liquidity being taken up to affect the company's daily operations and reduce the risk of capital chain breakage. Alshwer et al. (2011) state that the main purpose of the acquirers to choose stock payment is to reserve mobile funds, so as to avoid a break in the capital chain when large cash payments are required. This advantage is often seen in large scale M&A activities. Such acquisitions generally require a large amount of cash, which is difficult for the acquirer to afford. Equity payments can be a good solution to this problem. For the shareholders of the target company, they retain partial ownership of the new company after the M&A is completed. They can therefore still participate in the distribution of the benefits of the new company. Shleifer and Vishny (2003) argue that the target company may be willing to receive equity payments due to the short-term M&A premium it brings, while the target company's managers may be able to liquidate the stock options at a better price. What's more, equity payments have more flexible revenue recognition. Both parties to the transaction can enjoy tax benefits to ease the tax burden. However, equity payments have a greater impact on the capital structure of the business. It changes the original equity structure and dilutes the shareholders' ownership and control right of the original shareholders. Shareholders of the acquirer may even lose control of the company. In their study, Faccio and Masulis (2005) point out that the use of equity payments creates a new majority shareholder for the acquirer when the target

company has a high concentration of ownership. Compared to cash payments, equity payments are a more complex procedure. Often the issue of new shares is subject to the rules of the relevant authorities and exchanges and therefore takes longer to process. The process is fraught with uncertainty and both the target company and competitors may act to block the completion of the acquisition. As a result, the acquirer may lose out on the best opportunity to do so, increasing the risk of a failed acquisition. Finally, equity payments often attract risk arbitrageurs. Pressure from this group and the expectation of dilution of earnings per share may cause the acquirer's share price to fall.

2.2 Determinants of payment method

There are various factors that determine the method of payment, and companies choose different methods of payment for their own purposes. From the perspective of the purpose of an M&A, the primary reason why a company chooses a certain payment method is because it will help the company achieve its M&A objectives. Many M&A cases in China occur between a listed company and an unlisted company. Due to the strict listing rules in China, many companies choose to acquire a listed company in order to obtain financing more easily in the capital market. Cash payments in such acquisitions often create a liquidity burden for the acquirer. Paying in cash in such M&A creates a liquidity burden for the acquirer and also entails certain risks. Firstly, the outflow of large amounts of cash in a short period of time may have a negative impact on the day-to-day operations of the company. Secondly, if the new post-acquisition business underperforms and fails to generate revenue, then the company may fall into difficulties as a result of the acquisition. Especially if the company chooses to borrow to finance the acquisition, then the repayment of this debt may also be affected. Such a poorly run business is likely to come under pressure from regulators and affect its status as a listed company. A study by Yang, Guariglia and Guo (2019) considers the opportunity cost of holding free cash flow and argues that firms with high growth opportunities but financial constraints are reluctant to spend cash on acquisitions. Some businesses need to be financially restructured due to mismanagement resulting in an undervaluation of the market value. This type of M&A chooses cash payment that kicks out the original management in order to improve corporate governance. Many companies enter into M&A for the purpose of strategic partnerships. Both parties have a stake in the merger and are expected to work together to maximise their post-merger benefits, so equity payments are more appropriate in this case, which binds the interests of both parties together. All of these reasons may lead to different payment options.

In many cases the resources available to companies are largely limiting their choice of payment method. This means that they are not able to choose as they wish. A rational decision should balance the goals the company wants to achieve with the resources it has. This is also important when it comes to the choice of payment method. From a company inside perspective, cash reserves are an important factor governing a company's choice of payment method. Cash is vital to a company's day-to-day operations, so companies cannot make investment decisions without considering their own cash reserves and liquidity. Therefore, a company's cash reserves are the first factor to consider when deciding on an adequate payment method for M&A. Many scholars agree that companies with higher cash reserves are more likely to choose cash payments first in M&A activities. Jensen (1986) put forward the theory of free cash flow. From the perspective of free cash flow, he believes that when the acquirer has a large amount of free cash flow, it tends to choose cash payment. Martin (1996) believes that when the cash balance of the acquirer is lower than the acquisition price, the company prefers stock financing. The study of Harford (1999) also made the same point that sufficient capital reserves justify the acquirer's choice of cash payment. Vladimirov (2015) pointed out that only when there is a lack of competitive capital reserves, the acquirer will use stocks in the acquisition process. All of the above studies demonstrate that the choice of cash payments is largely limited by the amount of cash a company has. Not only the level of cash one has, but also the company's ability to raise funds will influence the choice of payment method. In terms of corporate financing costs, lower-cost internal financing is preferable to relatively higher-cost external financing. Martynova (2009) pointed out that the cost of external financing is often higher than that of internal financing, so companies with a higher level of cash are more willing to choose cash payments to obtain ownership of the target company. Therefore, cash-rich companies are less likely to issue new shares to pay for M&A. When choosing a payment method, companies also consider their external financing capacity in addition to their own cash reserves. In summary, firms with greater cash resources or access to finance theoretically tend to use cash to pay for mergers and acquisitions. Firms without sufficient cash or access to cheaper funding in the capital markets have to pay in shares.

Control right has always been an important issue in M&A adequacy activities. A discussion of the advantages and disadvantages of cash and equity payments is often inevitable. The main reason for many companies to choose a payment method is the control right. The control structure of a company has a significant impact on the day-to-

day operations of the company and is an issue of great concern to management and shareholders. The direct impact that the method of payment has on the control of the business is also an important reference for shareholders when choosing the method of payment. Different companies are in different business environments and have different control structures. While advantageous companies have a looser control, some companies have a more centralised control. Compared to developed Western countries, Chinese companies have a relatively high degree of equity concentration. Different control structures may also drive companies to choose different payment methods. Research has found that companies with control concentrated in a few hands are more willing to make cash payments because they fear loss of control. Amihud et al. (1990) believe that when the equity concentration is highly concentrated or highly dispersed, the acquirer tends to choose the stock payment; when the equity concentration is generally concentrated or dispersed, the acquirer tends to choose the cash payment. Faccio and Masulis (2005) conducted an in-depth study of the M&A activities of European listed companies and concluded that companies with volatile control rights tend to pay in cash in order to maintain control and avoid dilution of equity, while companies with stable control rights but narrow financing channels are more willing to choose stock payment. Some academics have cut through the target company's shareholding structure and they have found that the higher the percentage of insider ownership in the target company, the more likely it is that a final equity payment will be used. This is because this method of payment allows insiders of the target company to have some control over the post-merger company, which in turn makes it easier for them to enter the management of the new company after the merger. Yung et. al (2013) believe that even though the quality of earnings is poor, acquiring companies with low insider ownership mainly use cash in acquisition financing.

Information asymmetry is prevalent in M&A transactions. Nicholson et al. (2016), using a sample of M&A cases in ASEAN countries from 2001-2012, argue that cash acquisitions are likely to be chosen when the acquirer has more information about the target company, while equity financing is more likely to be chosen when there is a difference in valuation between the acquirer and the target company. Eckbo et al. (2018) suggest that if the target company has good accessibility to information and is more confident about the valuation of the acquirer then the risk arising from the payment method can be reduced. Managers within a company often have more relevant information than outside investors. Management often sends signals to the market

through actions that make outside investors more aware of the business situation. Myers and Maljuf (1984)'s signalling theory suggests that in a world of information asymmetry, management's choice of payment methods may send different messages to the market. For example, an acquirer that pays in cash is often perceived as having a large amount of cash and a low level of liquidity risk for the business. Also, sufficient cash flow often indicates that the company is operationally stable and less likely to have insolvency problems in the short term. When a company's stock is overvalued, insider managers who have more knowledge of the company's true value have a greater incentive to issue additional shares in exchange for ownership of the target company. Because they can get the target company with less equity. Therefore, pay in share is also a signal that the company might be overvalued. Similarly, information asymmetry in the valuation of the target company can also have an impact on the acquirer. In the case of a cash payment, the acquirer will bear all the costs when the target company is overvalued. The original shareholders of target will gain most in the transactions. If payment is made in equity, then the interests of the acquirer and the target company are tied together. The risk arising from inaccurate valuations is shared by both parties. The research of Hansen (1987) models the payment choices of the acquirer under the situation of information asymmetry, and found that the acquirer is more willing to choose stock payment if the target company understands its company value better than the acquirer. Faccio and Masulis (2005) believe that when the parties of the M&A are in different industries, because they do not understand each other and lack trust, the acquirer tends to choose the stock payment method; when the parties of the M&A are in the same industry, they understand the intrinsic each other better. The acquirer tends to choose cash payment. Bruslerie (2013) also believes that the more information the acquirer has about the target company, the more likely it is to choose cash payment, otherwise it tends to choose stock payment. Therefore, the M&A party will give due consideration to information asymmetry when selecting the payment method. When information asymmetry between the parties is high, issuing additional shares to pay for the acquisition is a better option for the acquirer because of risk sharing. Conversely, when information asymmetry between the parties is low, cash payments are more appropriate.

Klitzka, He and Schiereck(2021) suggests that the way of payment is considered to be an essential decision in the M&A transactions and is considered to be a media that reflects how companies interpret the overall market valuation and their comparative power to their opponents. The market's assessment of the value of a stock often deviates from its

intrinsic value. Many academics agree that market overvaluation of stock is one of the factors driving M&A. Myers and Majluf (1984) put forward the signalling theory, that when the market underestimates the stock price, the acquirer tends to choose the cash payment; when the market overestimates the stock price, the acquirer tends to choose the stock payment. Hansen (1987) believes that stock payments reduce the possibility of overpayment because the target shareholders would share any subsequent declines in the company's stock after the M&A. When a company's stock is overvalued, more money can be raised by issuing new shares than if the stock is undervalued or normally valued. Internal managers who have information in this situation therefore prefer to pay in shares. By issuing fewer new shares, ownership of the target company can be acquired, while the risk to the target company's shareholders becomes higher. At the same time, fewer new shares are issued to reduce the degree of equity dilution. This is less costly for the acquirers. It has been concluded that the higher the valuation premium for the acquirers, the more willing they are to issue shares to pay for the merger. The impact of market valuation on payment methods is also essentially due to information asymmetry.

2.3 The impact of payment methods on performance

The choice of payment method has always been an important concern. Issuing additional shares can lead to dilution of equity, which can affect the control of the original shareholders, while cash payments can increase the company's capital stress and liquidity risk, which can also have a negative impact on the day-to-day operations of the post-merger company. When an M&A is completed, the acquirer and the target company are integrated as one. Whether the new company has the effect of one plus one and more than two. In other words. whether the M&A brings about synergies effect, is an important objective in assessing M&A performance. Whether the market position of the post-merger company is improved, whether the allocation of resources is optimised and whether the strategic objectives of the company are brought closer are all important references for measuring performance. Many scholars have studied this topic and have come up with inconsistent results. Their findings suggest that there is no single, definitive answer to the question of which payment method will deliver the greatest M&A performance. In order to better compare and summarise the findings of previous studies, this dissertation divides M&A performance into long-term and short-term performance and discusses the impact of payment methods on them separately.

First, scholars have drawn three main conclusions about the impact of payment methods on short-term M&A performance. The first view denies the impact of the payment

method on the short-term performance of the business. They argue that there is no significant change in a firm's short-term performance, regardless of the payment method chosen. Some studies suggest that the impact of different payment methods on firm performance is not significant. Heron and Lie (2002) believe that choosing different M&A payment methods has no significant effect on excess returns. Some studies have shown that both cash and equity payments result in positive cumulative excess returns for companies. However, the majority of studies support that the short-term performance of firms with different payment options is significantly different. Many of these studies endorse the superiority of equity payments. There are scholars concerned about the performance of both parties of M&A. Franks et al. (1988) believe that both parties of M&A can obtain significant excess returns when they select equity payment; but when the cash payment method is selected, the target company can obtain significant excess returns, while the main acquirer cannot obtain significant excess returns. Andrade et al. (2001) use data from the US M&A market and find that cash payment terms have a negative impact on M&A performance, while stock payment terms have a positive impact. Boateng and Bi (2013) study M&A cases in the Chinese market and conclude that the payment method is related to the return of the acquirer, and stock financing acquisitions often outperform cash financing acquisitions. Some scholars affirmed the superiority of cash payment. Travlos (1987) found that, on average, the acquirer obtains negative excess returns when announcing stock financing acquisitions, while obtaining normal returns when announcing cash financing acquisitions by analysing 167 acquisition cases from 1972 to 1981. Sudarsanam (2003) belives that the acquirer cannot obtain a positive excess return when they select equity payment method. Raymond et al. (2004) take 1555 cases of M&A of non-listed companies by listed companies in Australia from 1990 to 1998 as a sample, and found that listed companies that chose to pay in cash received positive excess returns. The findings of Kam et al. (2008) suggest that cash payments can generate positive market reaction for listed companies, while asset payments do not add value to the company. Chi et al. (2011) also argue that cash payments have a positive influence on the value of the acquirer in the M&A process.

Similar to the findings on short-term performance, the findings on long-term performance also did not reach agreement. Agrawal, Jaffe, and Mandelker (1992) note that post-acquisition returns are higher for cash-financed acquisitions than for stock-financed acquisitions in both tender offers and mergers. Andrade et al. (2001) believe that, compared with the stock payment method, the acquirer's choice of cash payment

can achieve better M&A performance. Yuan et al. (2016) believe that the profitability of growth companies that use equity payments is significantly higher than other similar companies.

Most studies on the performance of mergers and acquisitions in developed capital markets have used the event study. This method focuses more on the short-term M&A performance of firms. Chinese scholars, on the other hand, are more concerned with the long-term M&A performance of firms, which mainly uses the accounting research method based on financial data. This is because event studies are based on the theoretical assumption of efficient markets. The efficiency of Chinese capital markets is highly controversial. Scholars therefore prefer to study long-term performance. This dissertation will adopt both of these approaches to analyse the impact of payment methods on the short-term performance and long-term performance of M&A in the Chinese market respectively. As the summary of the literature does not lead to a unified conclusion, this dissertation will draw the following two hypotheses based on the analysis throughout Chapter 2.

Due to policy support, companies can benefit more from using cash when making M&A payments. Therefore, the success rate of M&A is also enhanced for companies that use cash payments. According to signalling theory, cash payments not only demonstrate to the outside that the company is in good operating condition and has high capital reserves, but also indicate that the stock market is regarding its stock value below its intrinsic value. Therefore, this dissertation proposes hypothesis H1

H1: The short-term performance of cash payments is better than stock payments.

As China's capital markets continue to develop and relevant policies continue to improve, more complex equity payments are becoming increasingly viable in China. The issuance of additional shares for the purpose of paying M&A consideration has attracted new shareholders and professional institutional investors, which can help to improve the management and governance of firms. For example, group companies may also inject high-quality assets into listed companies, which is conducive to improving the long-term business performance of listed companies. The equity payment is therefore in line with the development rules of China's capital market at this stage. According to risk-sharing theory, the willingness of the target company to accept the share-based payment indicates their willingness to share the risk and also shows an optimistic expectation of the post-acquisition synergy effect. It also shows that both parties are more confident in the future long-term development of the new company. Managers may make decisions

that are contrary to the long-term interests of the company out of their own interest to ensure that their control is not weakened. Choosing to pay in cash for personal gain may result in a shortage of liquidity for the company and negatively impact day-to-day operations. Such behaviour is detrimental to the company's long-term operations. Therefore, this dissertation proposes hypothesis H2.

H2: The long-term performance of equity payments is better than cash payments.

CHAPTER 3 METHODOLOGY

3.1 Research philosophy

Saunders (2019) suggests that there are four main research philosophies in business research: pragmatism, realism, positivism and interpretivism. Whatever the purpose of a M&A, companies eventually hope to benefit from it. However, real-life examples show that not all mergers and acquisitions lead to excellent outcomes and increased shareholder wealth. There are still many acquisitions that do not have a wealthy effect on the business. As a result, a large body of research has sought to identify and explain the factors that influence M&A performance. Previous research has found that the choice of payment method can have different effects on firms. However, it is still worth exploring and confirming whether M&A cases in the Chinese market follow this pattern. Therefore, it is the analysis of the sample collected and the conclusions drawn that will be the final finding of this dissertation, regardless of whether these conclusions are consistent with previous research findings and relevant experience. This is the philosophy of this dissertation, which is to observe and collect relevant data and analyse it using appropriate research methods in order to draw relatively objective conclusions.

3.2 Research approach

The research approach is established primarily to address the research question. The research approach is concerned with the use of appropriate methods to answer the research question in order to reach a credible conclusion. Saunders (2019) summarised three main types of research approach - induction, deduction and abduction. Deduction involves summarising and analysing previously established and proven theories to develop one's own hypothesis. Induction is the opposite of deduction, while abduction is a combination of both. This dissertation uses deduction as the research approach. An analysis of the theory leads to the hypothesis that cash payments outperform stock payments in the short term and stock payments outperform cash payments in the long term. The data collected from the sample is then statistically analysed and conclusions are drawn to test the validity of the previously stated hypotheses. This is a process of moving from theory to data, which verifies the validity of the theory with data.

Most financial researches generally use quantitative data; therefore this dissertation also applies quantitative analysis. The research subjects of this dissertation - payment method and M&A performance - are both quantifiable indicators. Although payment method data is not numerical data, the application of dummy variables can be a good solution to

this problem. The objective of this paper is to analyse the impact of different payment methods on M&A performance. This means that this dissertation aims to find out what kind of relationship between payment method and M&A performance, positive, negative or no relationship. A good way to investigate the relationship between the two variables is to establish a regression equation. The correlation coefficients are then tested statistically to determine their significance. If the coefficients are significant enough, then a linear relationship can be demonstrated. In addition, the introduction of control variables can also help to improve the accuracy and significance of the regression results.

The time horizon of this dissertation is cross-sectional. in contrast to longitudinal studies that focus on trends or patterns of change in research subjective over time, cross-sectional research examines specific topics at a specific point in time. This dissertation is not interested in trends in M&A performance over time, but rather in examining the relationship between M&A performance and payment methods at a given time. The trend of change is not the main concern of this dissertation, whether it is a measure of long-term performance or short-term performance. In order to investigate the relationship between the two, this dissertation selects a sample of M&A cases that occurred in the Chinese market in 2019 to analyse the relationship between performance and payment method for M&A that occurred in that year.

The literature suggests that different payment methods have different effects on the long-term and short-term performance of firms based on their own characteristics. In order to investigate the impact on long-term and short-term performance separately, the research approach in this dissertation is divided into two main parts. One is research of long-term M&A performance and the other is research of short-term M&A performance. The former uses the accounting research method, while the latter uses the event study method. Corrado (2011) notes that event study was first used for statistical analysis in empirical studies in accounting and finance, and have since been applied to a wide range of other disciplines, including economics, management and law. The event study method is usually used to measure the market reaction to a specific event. It can therefore be used to study the impact of an M&A event on a company's share price, its short-term performance. Academics generally use financial statement-based accounting ratios for measuring the long-term performance of a company by payment method. Unlike event study, which focuses on capital market reactions, accounting research focuses more on changes in business performance. Therefore, the accounting research method generally

analyses operational indicators that represent the profitability, liquidity and operational capacity of a company. The accounting research approach is therefore more applicable to the analysis of long-term performance.

3.3 Research design

3.3.1 Sample selection

This dissertation selects a sample of M&A events that occurred on the A-share of Shanghai Stock Exchange and Shenzhen Stock Exchange in China in 2019. In order to be able to observe long-term M&A performance, cases of recent M&As are not suitable for use in the research. The determination of long-term M&A performance should also be extended to at least one year after the M&A. At the same time, the analysis of long-term performance is based on regularly published financial data of the acquirer. Financial data for the end of 2021 is currently not available. The most recent sample that can be collected is therefore the 2019 M&A cases. And we count the relevant financial data of the acquirers of these M&A events for the three years from 31 December 2018 to 31 December 2020, the year before the M&A to the year after the M&A. All data are secondary data and are taken from the CSMAR database of M&A and financial analysis. The CSMAR database collects the most comprehensive and accurate data on China's finance and economy, and is currently the largest database of its kind in China.

In order for the results of the study to be more accurate and to objectively reflect the topic of research, the sample must be representative, i.e. consistent with the overall population. In this dissertation, the initial sample was screened according to the following criteria. The relevant rationale is also explained in detail below.

1. the acquirer of the M&A event is an A-share listed company on the Shenzhen Stock Exchange or Shanghai Stock Exchange in China
2. The date of announcement of the M&A event is definite.
3. the M&A transaction was successfully completed.
4. the same company with multiple M&A events in a year but with different payment methods were excluded from the sample
5. the same company with multiple M&A events in a year with the same payment method to retain the largest transaction amount
6. the types of M&A are horizontal, vertical and cross-industry M&A
7. exclude M&A events where the acquiring company is in the financial sector
8. the method of payment for the M&A is stock or cash
9. select a sample with a relative deal size (deal value/total assets) should large enough.

The above selection criteria are based on the following considerations: Firstly, the data of listed companies is open and transparent and more easily available. In contrast, data on unlisted companies are not available to the general public and shares are not traded in the open market. Therefore, accurate share prices are for unlisted company is not available. This is an obstacle to the measurement of short-term performance. Secondly, samples with unclear announcement events cannot be analysed using the event study method. It is also difficult to determine whether M&A actions have had an impact on their performance in cases where there has not been a successful completion of the transaction. Thirdly, companies with multiple M&A events that use different payment methods are unable to distinguish between the effects of each method. Fourthly, this paper focuses on two different payment methods: equity and cash. These are also the two most dominant payment methods for M&A in the Chinese capital market. Other payment methods such as assets payment account for less than 1% of the 2019 M&A sample and are therefore not discussed in this paper. Finally, the sample with relatively larger deal sizes is more representative and also has a greater impact on acquirers. At the same time, M&A activity with larger deal sizes does not occur frequently within the same company, which avoids the disruption of multiple M&A events as much as possible.

After screening and eliminating ineligible samples and samples with missing key information, we ended up with 107 valid samples of long-term performance, of which 79 were cash payments and 28 were stock payments. Continuing to eliminate samples with missing information on share price at the announcement date, we finally obtained 85 short-term performance samples, of which 63 were cash payments and 22 were stock payments.

Payment Method		Cash	Stock	Total
Short-term	Numbers	79	28	85
	Percentage	93%	33%	100%
Long-term	Numbers	85	22	107
	Percentage	79%	21%	100%

Table 1: Sample Statistics

3.3.2 Variable selection

a) Short-term dependent variables

This dissertation on the measurement of short-term performance uses primarily an event

study. The specific research steps are referred to Mackinlay (1997) on event studies in economics and finance, which is the classic article on this area. This dissertation identifies the five-day period two days before and two days after the M&A announcement, i.e. [-5, 5], as the event window. The period from 90 days prior to the M&A to 31 days prior, i.e. [-90, -31], is used as the estimation window. The CSI 300 index is used as the market benchmark. The change in returns for each sample for each day during the estimation window and the corresponding market returns are first calculated.

Firm return=$(R_{it}-R_{it-1})/R_{it-1}$

Market return=$(R_{mt}-R_{mt-1})/R_{mt-1}$

Next a simple regression of firm returns and market returns is performed using a market model to get the estimator of α and β.

$R_{it}=\alpha_i+\beta_i R_{mt}+e_t$

The obtained estimates of α and β are then brought into the market model to obtain the normal return E(R) for stock i for each day of the event window. The actual returns observed for each day of the event window are then subtracted from the normal rate of return to obtain the abnormal return AR. The abnormal returns for the five days within the event window are summed to obtain the cumulative abnormal return CAR. the abnormal returns obtained for each day are averaged to obtain the average abnormal return AAR for each day.

The final cumulative abnormal return CAR is the dependent variable representing the short-term performance of the M&A.

b) Long-term dependent variables

In this Dissertation, Tobin's Q is used to measure the long-term performance of a company. Tobin (1969) introduction the ratio that show the relationship between a company's share value and the replacement cost of the asset represented by the shares. As shown by the formula, Tobin's Q contains both accounting and market information, as opposed to other purely accounting indicators such as return on equity (ROE) and earnings per share (EPS). In other words, Tobin's Q is more closely linked to the capital markets and provides a better measure of long-term corporate performance than accounting indicators that can be easily manipulated by managers. In addition, maximising firm value, i.e. maximising shareholder wealth, better reflects the needs of investors and the growth of the firm than maximising profits.

Tobin's Q = (market value of equity+ liabilities) / (total assets+ liabilities)

The change in Tobin's Q represents the long-term M&A performance of a firm. The change in firm performance is measured by comparing the difference in Tobin's Q between firms in the year of the M&A and the year after the M&A and the year before the M&A.

c) Control variables

In order to better analyse the impact of payment method on M&A performance, this dissertation sets up a number of control variables.

Profitability of the company (ROA). This indicator is represented by the return on total assets (ROA) in the year prior to the M&A. Generally speaking, companies with better profitability may engage in ill-advised and blind acquisitions, and usually in such cases the acquirer is willing to pay a higher amount. This can have a detrimental effect on the post-acquisition company.

The leverage of the company (FL). This variable is represented by the ratio of the company's total assets to its total liabilities in the previous year. A company's financial leverage affects long-term performance by influencing the choice of payment method. A company's financial leverage limits its ability to raise capital. Generally, companies with higher financial leverage have more difficulty raising capital and will therefore be more willing to choose equity payments.

Price to net ratio (PBR). The PBR reflects the market's valuation of a company. Generally speaking, growth companies have a higher P/B ratio, while value companies have a lower P/N ratio. There are also significant differences in the M&A performance of different types of firms.

First Majority Shareholder Ownership (FMSO). A firm's shareholding concentration affects the choice of payment method, which in turn affects the performance of the firm. Generally, shareholders of companies with higher equity concentration are more likely to choose cash payments for fear of losing control right.

Variables	Name	Symbol	Descriptions
Dependent variables	Short-term performance	CAR	Accumulated abnormal returns from two trading days before to two trading days after the date of the M&A announcement
	Long-term performance	ΔQ	Difference between Tobin's Q at the end of each year after the M&A and the end of the year before the M&A

Independent variable	Payment method	Pay	A value of 1 if the listed company is paid in stocks and 0 if paid in cash
Control variables	Financial leverage	FL	Ratio of total assets to total liabilities of the company in the year prior to the M&A
	Profitability before M&A	ROA	Return on total equity of the company in the year prior to the M&A
	First Majority Shareholder Ownership	FMSO	Percentage of shareholding of the largest shareholder
	Price-to-Book Ratio	PBR	Ratio of market value per share to net assets per share for the year prior to the M&A

Table 2: Definition and description of variables

3.3.3 Regression models

This dissertation examines the impact of stock payments and cash payments on the long-term and short-term performance of mergers and acquisitions, respectively. CAR, a measure of short-term performance, and changes in Tobin's Q, a measure of long-term performance, are used as dependent variables. Payment method is the independent variable. Finally, the effects of firm leverage, profitability, First Majority Shareholder Ownership and P/B ratio on firm performance were also considered. They are set as control variables. Therefore, this dissertation constructs a multiple linear regression model as follows.

$CAR=\alpha+ \beta_1 Pay+ \beta_2 FL+ \beta_3 ROA+ \beta_4 FMSO+ \beta_5 PBR+ e_t$

$Q=\alpha+ \beta_1 Pay+ \beta_2 FL+ \beta_3 ROA+ \beta_4 FMSO+ \beta_5 PBR+ e_t$

CAR is the cumulative abnormal return from 2 days before to 2 days after the M&A announcement date. ΔQ comprises ΔQ1 and ΔQ2, which represent the difference between Tobin's Q at the end of the year of the M&A and the year before the M&A, and the difference between Tobin's Q at the end of the year after and the year before the M&A, respectively.

CHAPTER 4 RESULTS

4.1 Introduction

The results section analyses long-term performance and short-term performance separately. Trends in long-term and short-term performance are first analysed on the basis of statistical descriptions. Next the differences in the means of the two payment methods are compared. Finally control variables are added for regression analysis.

4.2 The impact on short-term performance

4.2.1 Statistical description

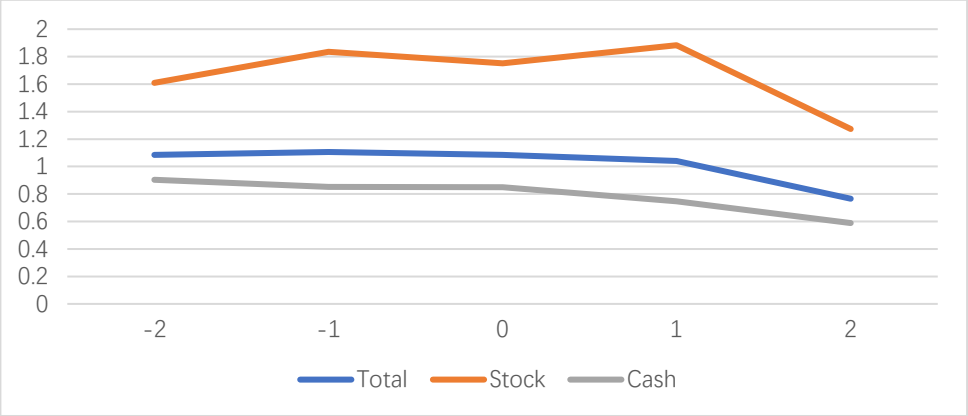

Figure 1: AAR trend graph during the event window

Figure 1 shows the abnormal returns generated by the different payment methods and the sample as a whole during the event window. It is clear that both stock and cash payments generate positive abnormal returns for the acquirer during the event window, and that stock payments generate higher returns than cash payments. Abnormal returns are obtained by subtracting expected returns from actual returns. Expected returns are the regular returns that the business would have received if the M&A event had not occurred. If abnormal returns are positive then it means that the return of an M&A are higher than they would have been if the M&A had not occurred. This means that the M&A has increased the wealth of the firm. The average abnormal return is the average of the abnormal returns for each day of the event window for the sample as a whole. The overall AAR remains above zero throughout the event window, although it decreases after announcement. The positive average abnormal returns also indicate that there is a positive market reaction to the M&A event, regardless of the payment method chosen. Market efficiency theory suggests that an efficient market will only demonstrate significant abnormal returns on the day of the announcement, not ahead of time and not behind. This means that ideally the average abnormal returns prior to the event day

should all be 0. Figure 1, on the other hand, shows that the market reacted before the announcement was made. The likely reason for this is that the market got the news about the M&A in advance. In general, the release of an M&A announcement represents the finalisation of the M&A. However, in less efficient markets, a segment of the population may get the information earlier and react, which in turn affects the market as a whole. The presence of positive abnormal returns on each day of the event window not only indicates that the M&A has increased the wealth of shareholders, but also reflects that the current market may be overheated. In summary, whichever payment method is chosen will increase shareholder wealth, but stock payments receive higher average abnormal returns than cash payments.

	Total		Equity Payment		Cash Payment	
	AAR	CAR	AAR	CAR	AAR	CAR
Mean	1.016438	4.036642	1.670504	4.749862	0.788034	3.631004
Median	1.083943	4.872677	1.752335	6.361851	0.850537	3.916418
Maximum	1.105808	28.261579	1.883136	28.261579	0.903541	14.586197
Minimum	0.765719	-19.492046	1.273223	-1.907975	0.588495	-19.492046
Standard Deviation	0.142148	6.081694	0.245413	6.624092	0.125232	5.377537

Table 3: Descriptive Statistics of AAR and CAR

As can be seen from Table 3, both CAR and AAR are higher for equity payments than for cash payments, however they are also more volatile. The information conveyed in Table 3 is generally consistent with Figure 1. Equity payments can create higher cumulative abnormal returns for the acquirer, although both methods create positive abnormal returns. To further verify the accuracy of this finding, this dissertation next performs a t-test on CAR and AAR to test for significance.

	H0: AAR=0			
	t-value	df	s.d.	P
Total AAR	15.989	4	0.142	< 0.01
Equity AAR	15.221	4	0.245	< 0.01
Cash AAR	14.071	4	0.125	< 0.01

Table 4:t-test results for AAR

In order to verify whether the different payment methods have a positive or negative

impact on the short-term performance of M&A is statistically significant, t-tests are conducted for the total sample, the cash payment sample and the equity payment sample respectively. The results are shown in Table 4, where the mean abnormal returns for the sample as a whole are positive and significant at the 1% level. This indicates that all 85 M&A events in the sample have a positive impact on the short-term performance of the acquirer. In addition, both cash and equity payments created positive average abnormal returns and were significant at the 1% level of significance. In order to further investigate whether the impact effects of the two payment methods are different, a mean difference test will be performed next.

4.2.2 Analysis of differences in means

	Equity Payment	Cash Payment	Difference (t/z-test)
AAR	1.670504	0.788034	7.162***
CAR	4.749862	3.631004	-3.465***

Table 5: Univariate test

Table 5 shows that the average abnormal returns and cumulative abnormal returns for the sample as a whole are positive. The average daily abnormal returns for equity payments within the event window of [-2,2] are higher than for cash payments and are significant at the 1% level. The mean of CAR of 4.75% is higher than the 3.63% for cash payments. This result is also significant at the 1% level. Therefore, it can be concluded that M&A have a positive impact on the short-term performance. However, the short-term performance of firms that chose different payment methods differed and stock payments were significantly better than cash payments. This is inconsistent with H1 that cash payments outperform stock payments in the short term. There are several possible reasons for the market to react more positively to stock payments. First, the above analysis only considers the impact of a single factor, payment method, on short-term performance, without controlling for other variables. This will be explored further in the regression analysis that follows. In addition, stock payments bind the interests of both parties to an M&A together. The willingness of the acquirer's shareholders to accept shares and take joint control of the new company with the acquirer's shareholders also indicates that both parties are more confident about the future of the company. This can also send a positive signal to the market that investors may believe that the enterprise can create more wealth in the future.

4.2.3 Multiple linear regression analysis

The results of the above analysis show that different payment methods positively affect the short-term performance of M&A, and that short-term performance of equity payments is better than that of cash payments. This conflicts with H1. However, the analysis above only focuses on a single variable, payment method. However, there are many factors that affect short-term M&A performance and considering only the effect of payment method may reduce the accuracy and reliability of the research results. Therefore, to further analyse the impact of payment method on short-term M&A performance, four control variables are introduced in this dissertation. Return on Total Assets (ROA), Price-to-Book Ratio, First Majority Shareholder Ownership, and Financial Leverage will help to analyse the effect of payment method on M&A short-term performance.

	BPR	PAY	FL	FMSO	ROA
BPR	1				
PAY	0.028818	1			
FL	0.376235	0.332968	1		
FMSO	-0.02281	0.108599	0.018706	1	
ROA	-0.24483	-0.07911	-0.33586	0.2117	1

Table 6: Correlation matrix

Before conducting the regression analysis, the correlation between the variables should be first tested. If the correlation between the explanatory variables is high, then multicollinearity will occur and the accuracy of the model will be reduced. Table 6 shows that the correlation coefficients between the explanatory variables and the control variables all remain at a low level of less than |0.4|. Therefore, the correlation between the variables is low and the existence of multicollinearity can be ruled out. Therefore, the next step of multiple linear regression analysis can be performed.

Variables	
Constant	3.054 (1.641)
Pay	5.019*** (3.343)
FL	-4.170 (-1.142)

FMSO	0.074* (1.777)
ROA	-10.432* (-1.893)
PBR	0.041 (0.308)
Number of observations	85
Adjusted R^2	0.137
F-test	3.666

Table 7: Short-term regression results

The F statistics of the whole model is 3.66, which is significant at the 1% level. Therefore, the result that the correlation coefficients are all zero can be excluded at the 1% level of significance. In other words, the overall significance of the model is good and the independent variables can explain the dependent variables well. The regression results indicate that payment method is positively related to short-term M&A performance at the 1% level of significance. This means that the short-term performance of firms that choose to pay in equity is significantly better than that of cash payments. This finding is consistent with the results of the analysis above but inconsistent with the H1 derived from the literature review. There are several possible reasons for the inconsistency in the findings. The literature review concluded that cash payments outperformed equity payments in the short term mainly based on the signalling theory of information asymmetry. However, the Chinese market has a large number of M&A transactions where the target company is an unlisted company. It is difficult for these companies to send signals that can be interpreted by the market. Therefore, signalling theory has major limitations when studying M&A transactions in China. Secondly, companies in the Chinese market that choose to pay in shares are often accompanied by a directed issue and an overall listing. The Chinese market has strict conditions for stock issuance. Therefore, companies that are able to issue shares to raise funds for payment tend to have strong capabilities. Unlike developed capital markets, the main participants in the Chinese stock market are individual investors. This group of people often lacks professional investment knowledge and skills. They are willing to buy shares when they come across companies that issue shares or go public, which may push up the share price and lead to exceptionally high returns.

Both the percentage of shareholding of the first largest shareholder and ROA are significant at the 10% level. The positive correlation coefficient for the percentage of ownership of the first largest shareholder indicates that firms with higher equity concentration receive more cumulative abnormal returns. Firms with high equity concentration are less likely to experience control turbulence that could affect their operations. A more concentrated shareholding structure is therefore more likely to maintain the stability of a company's operations in the face of extraordinary events. ROA, which represents profitability, is negatively correlated with short-term performance. This means that firms with better profitability before M&A are more likely to have poorer short-term M&A performance. This may be due to the fact that profitable companies tend to keep a lot of capital within them. The abundance of capital but the scarcity of investment opportunities may lead managers to make blind investments. In contrast, managers of firms with less capital tend to be more cautious in their investment decision making. In addition, good profitability may lead managers to become arrogant and make irrational investment decisions. The pitfalls of these failed decisions can erupt in a very short period of time. For example, a company uses a lot of cash to pay for a merger or acquisition but fails to get the expected return. This can lead to a liquidity crisis due to lack of funds.

4.3 The impact on long-term performance

4.3.1 Statistical description

	-1	0	1
Total	0.8290	0.9493	0.9421
Cash	0.9172	0.9454	1.0057
Stock	0.5131	0.8405	0.5451

Table 8: Tobin's Q for the three years before and after the M&A

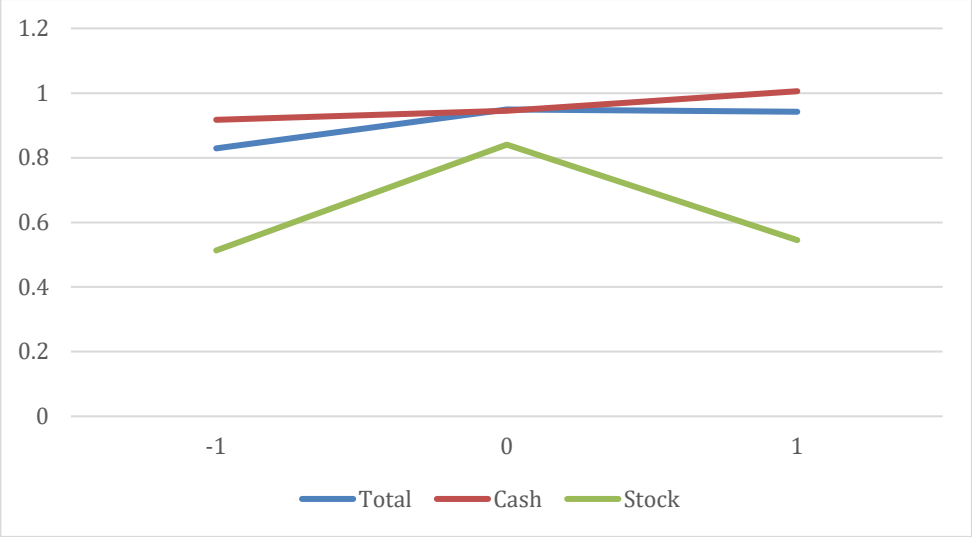

Figure 2: The trend of Tobin's Q for the three years before and after the M&A

Figure 2 shows that overall long-term performance rises gradually from the year before the M&A occurs to the year of the M&A, and remains at the same level in the year after the M&A. Long-term performance for cash payments has been rising over the three years, but not by much. Stock payments show a different trend. Long-term performance for equity payments increased rapidly at the end of the year of the M&A, with a growth rate of nearly 64%. However, it fell extremely rapidly by 35% in the year following the M&A, almost back to pre-acquisition levels. The lack of steady growth in overall long-term performance is largely due to the sharp decline in the performance of stock payments. The decline in long-term performance of equity payment may be linked to the spread of the Covid-19 in 2020, which hit the global economy hard, and the Chinese market was no exception. Most companies suffered a long period of shutdowns and some were even on the verge of bankruptcy. Derbali (2020) et. al argues that the coronavirus upsets the current balance of the global economy and will redefine production and consumption world-wide. Companies that chose to pay in cash largely maintained high levels of long-term performance or even improved during this period. The likely reason for this is that companies that choose to pay in cash often have sufficient internal reserves of capital. They are therefore more able to face such sudden systemic risks. In contrast, companies that choose to pay with equity tend to be short of cash. They are vulnerable to a break in their capital chain after a crisis that affects their day-to-day operations.

4.3.2 Analysis of differences in means

	Difference	Mean	s.d.	t	P
Total	ΔQ1	0.153	1.022	1.548	
	ΔQ2	0.276	1.313	2.174	< 0.05
Cash	ΔQ1	0.121	0.887	1.201	
	ΔQ2	0.345	1.420	2.144	< 0.05
Stock	ΔQ1	0.249	1.335	0.985	
	ΔQ2	0.094	0.964	0.515	

Table 9: Mean difference test

ΔQ1 is the difference between Tobin's Q in the year of the M&A and year before the M&A. ΔQ2 is the difference between Tobin's Q in the year after the M&A and year before the M&A. The change in Tobin's Q represents the long-term performance of the M&A, which is the dependent variable in this dissertation. Table 9 shows the overall performance in the year of the M&A, with no significant difference between the performance of cash payments and the performance of stock payments. That is, there is no significant impact on performance in the year of the M&A regardless of the choice of payment method. However, cash payments had a positive impact in the year following the M&A. A significance of less than 0.05 would suggest that there is a difference in long-term M&A performance for cash payments. A positive mean indicates that long-term performance is better post-merger than pre-merger. The effect of stock payments on long-term performance is not significant. This means that there is no significant change in the long-term post-merger performance of companies that choose to pay in shares. In conclusion, the long-term performance of firms that choose cash payments is significantly better than stock payments. This finding is inconsistent with H2. The next regression analysis was conducted to further validate this finding.

4.3.3 Multiple linear regression analysis

The correlations of the same variables have been tested in multiple linear regressions for short-term performance and payment methods. The results showed a low correlation between the explanatory and control variables, ruling out multicollinearity. Therefore the correlation analysis between the variables is no longer shown when doing regression analysis on long-term performance.

	Pay	ROA	BPR	FMSO	FL
Mean	0.271028	0.029179	3.643151	33.12159	0.384689

Media	0	0.040399	2.359378	32.76	0.362609
s.d.	0.446582	0.111502	5.042415	14.37666	0.201223
Minimum	0	-0.80043	0.560147	9	0.048998
Maximum	1	0.230961	41.81824	89.09	0.976014

Table 10: Descriptive Statistics of variables

Variables	Q1	Q2
Constant	-0.001 (-0.003)	0.193 （0.511）
Pay	0.041 (0.168)	-0.510* （-1.746）
FL	0.362 (0.613)	1.039 （1.467）
FMSO	0.001 (0.105)	0.007 （-0.805）
ROA	-0.766 (-0.770)	-1.989* （-1.667）
PBR	0.000 (0.005)	-0.097*** (-3,723)
Number of observations	107	107
Adjusted R^2	-0.031	0.103
F-test	3.56	3.425

Table 11: Long-term regression results

Consistent with the analysis of differences in means, the effect of payment method on the long-term performance of M&A is not significant in the year of M&A. Therefore, it is not discussed too much. The model in Table 8 for Q2 has an F-value of 3.425, which is significant at the 1% level indicating a good overall significance of the model. The correlation coefficient for payment method is negative and significant at the 10% level. This indicates that cash payments outperform stock payments in the long run. This corroborates the results of the analysis above. However, this conclusion conflicts with H2. The year after the M&A happens to be 2020. The global economy is in a downturn because of the Covid-19. Companies that choose to pay in cash have strong cash reserves, which can help them get through this difficult period. Cash payments therefore

demonstrate superiority in the first year after the M&A.

ROA is significant at the 10% level and the correlation coefficient is negative. This suggests that managers of more profitable pre-merger companies may be more likely to show overconfidence and make blind M&A decisions. These acquisitions may be irrational and unintended for the long-term growth of the company. Blind, irrational acquisitions can also lead to a lack of effective integration of post-acquisition resources by managers, thereby affecting long-term performance. P/B ratio is significant at the 1% level and has a negative impact on long term performance. This means that companies with lower P/B ratios have higher long-term M&A performance. In general, the lower the P/B ratio, the higher the investment value of the company. Such companies tend to be undervalued. Stocks with a low P/B ratio usually represent value stocks. Conversely stocks with a high P/B ratio represent growth stocks. Over the long term, companies with a lower P/B ratio will slowly demonstrate their value. The research of Bauman (1997) et al. has shown that in the long run value portfolios outperform growth portfolios in terms of both total return and risk adjustment. At the same time, it will take some time for the market to adjust its valuation. Therefore, value stocks are more likely to yield high returns in the long run.

4.4 Conclusion

The results of the analysis in this dissertation were not consistent with the hypothesis. H1 argued that cash payments outperformed equity payments in the short term. However, the results are the exact opposite. Both methods improve the short-term M&A performance of the firm, but stock payments significantly outperform cash payments. This may be due to the fact that equity payments signal that both parties will work together and have confidence in the future of the new company. This also makes investors more bullish on these types of acquisitions. Another possible reason is that signalling theory is not sufficiently explanatory for the Chinese market. The findings on long-term M&A performance suffer from the same dilemma and are inconsistent with H2. The results suggest that cash payments significantly outperform stock payments in the long run. This may be due to the blow to the global economy from the coronavirus in 2020. Obviously, Chinese companies are no exception. Those firms that use cash payments tend to have abundant cash reserves. They are therefore more resilient in the face of unexpected crises.

CHAPTER 5 CONCLUSION

5.1 Conceptual conclusion

The results of analysis show that different payment methods have different effects on M&A performance. Firstly, this dissertation uses event study to measure short-term M&A performance and found that both cash and equity payments have positive cumulative abnormal returns. However, stock payments yielded higher returns than cash payments. This suggests that either choice can improve a firm's short-term M&A performance, but the effect of stock payments is more significant. This may be because stock payments convey that both parties to the M&A are more confident about the future growth of the new business. It may also be because cash payments have a limited impact in terms of the signal they send to the market. In the study of long-term performance, this dissertation found that the long term performance of firms that chose cash payments increased in the year following the M&A, while the long term performance of stock payments decreased in that year. It can therefore be argued that cash payments are significantly better than stock payments in the long run. However, the effect of payment method on long-term performance is not significant in the year of the acquisition. The year 2020, which is the year after the M&A occurred for the sample collected in this dissertation, is a very specific year. The widespread of the coronavirus has left the vast majority of firms exposed to the shock. The long-term performance of cash payments stands out in this year probably because these companies have a large amount of cash. They are therefore more resilient to risk in the event of such unexpected crises. So they perform better in the long run, especially when the performance of other firms declines. Also, this dissertation found that the more profitable the firm was before the M&A, the more likely it was that its performance would decline after the M&A, both in the long term and in the short term. This may be due to the fact that managers of firms with good long-term profitability may make unwise M&As due to their arrogance, thus affecting firm performance. In addition, firms with a low pre-merger P/B ratio have better long-term post-merger performance. This is because low P/B tends to indicate that the company is undervalued. Such value stocks have better returns in the long run.

There are still some weaknesses in this dissertation. Firstly, the widespread spread of the coronavirus in 2020 has had a significant impact on companies globally. Apart from a few sectors that enjoyed the benefits of the epidemic, most companies struggled or even

went bankrupt and collapsed. The market as a whole was also hit hard and has not fully recovered to this day. The sample M&A events selected for this research all occurred in 2019. The data relating to 2020 could not be avoided in the analysis of long-term performance. This black swan event was no less influential than the financial crisis. As a result, corporate performance in this year was also affected to a significant extent. This unexpected event may also have confounded the results of the study to some extent. In addition, the aim of this thesis is to analyse the different effects of different payment methods on the long-term and short-term M&A performance of firms. The study also draws relevant conclusions. For short-term performance, the positive impact of equity payments was greater. This finding also passed the significance test. In the long term, although the conclusion that cash payments are better than equity payments is obtained, it is not significant enough. The effect of cash payments was not significant in the year of the acquisition and the other control variables showed the same results. The regression results for this year do not allow any valid conclusions to be drawn and also have some negative impact on the analysis of long-term performance. Fortunately, these variables have a significant effect on long term performance in the year following the acquisition. In conclusion it can still be demonstrated that cash payments have an enhancing effect on long term M&A performance. Furthermore, the study reached significant conclusions, but not in line with the hypothesis established based on the literature. This dissertation tries to explain and give possible reasons for this. However, these explanations are still not sufficient to account for the inconsistent findings of the study. Overall, the dissertation provides answers to the research questions, but the answers are somewhat less convincing.

5.2 Methodological insights or Limitations

The findings of this dissertation are inconsistent with the expected hypotheses, possibly due to the following methodological limitations

This dissertation analyses the impact of M&A payment methods on the long-term performance of firms by extending the timeline to only one year after the acquisition. However, the process by which many M&As have an effect is slow. Observing and analysing performance only one year after the M&A may miss important information. For example, many technology companies start early in the process of introducing advanced technologies through M&A. Some technologies are so far ahead of their time that they take five or even ten years to become effective.

This dissertation selects M&A cases of Chinese A-share listed companies in 2019 and

ends up with a sample of 107 long-term performance and 85 short-term performance. The sample size is therefore small and may not be a good representation of the population as a whole. This may also be the reason why the effect of payment method in the year of M&A is not significant.

In analysing short-term M&A performance, this dissertation chose only two days before and after the M&A announcement as the event window. However, the efficiency of the Chinese capital market is limited. The market may not be able to fully digest this information in a five-day period to react. This may result in the cumulative abnormal returns CAR, a variable representing short-term M&A performance, not accurately reflecting the impact of the M&A.

This dissertation on the impact of payment methods on the short-term performance of firms uses an event study. This is also a common approach used when studying capital markets in developed countries. The event study is based on the theory of efficient markets. However, based on China's unique system, the Chinese capital market is not the same environment as the Western capital market. Also, as a capital market in a developing country, the efficiency of the Chinese market is controversial. Therefore, it may not be very appropriate to apply the event study when examining M&A events that occur in the Chinese market.

There is a wide range of opinions on the measurement of long-term M&A performance. Long-term performance represents the long-term operating conditions of a firm. There is no single comprehensive indicator in academia that can provide an overview of all aspects of a firm's operations. As a result, different studies have tended to use different indicators to represent long-term performance. In this dissertation, Tobin's Q is chosen to represent long-term performance mainly because of its combination of accounting and market information. However, it is still a single indicator. All it does is not provide a comprehensive picture of a firm's long-term business results.

Many of the references that help to build the theoretical foundation of this dissertation are old, being research findings from the last century. However, the theoretical underpinnings of some of the studies may have changed over time. As a result, the credibility and accuracy of the conclusions drawn are compromised. A certain number of citations to literature that is not sufficiently new may also affect the hypothesis building of this thesis, and hence the analysis of the findings.

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In this dissertation, the exact same control variables were chosen to help in the analysis when examining long-term M&A performance and short-term M&A performance. However, the same variables may have different explanatory power for long term and short-term firm performance. Therefore, in the regression results, the correlation coefficients of some variables are less significant. Therefore, the use of identical control variables to explain performance across time horizons may result in the research not yielding valid results.

5.3 Further research

There are many limitations to this dissertation. It is hoped that further research will correct the methodological weaknesses and continue to improve the research.

In order to fully understand the impact of payment methods on long-term performance, further research could extend the time horizon of the sample, for example by extending the study of long-term performance to three or even five years after the acquisition. This would provide a more comprehensive analysis of the impact of different payment methods on the long-term performance of companies.

Further studies could expand the sample size by selecting samples over time spans from three years to years or even longer. A large enough sample would help researchers to analyse the impact of payment methods on M&A performance more comprehensively and sufficiently. At the same time, a larger sample of data which represent the population better can also improve the accuracy and credibility of the findings.

Most research analysing the impact of payment methods on short-term performance has used the event study as the primary methodology. This method is more feasible and accurate for developed market studies. However, it may yield inaccurate results when studying less efficient capital markets. Therefore, further research should attempt to correct some of the flaws in the model to make it more suitable for less developed capital markets when studying this topic. Alternatively, further research could explore

new and different ways of analysing the short-term performance of M&A in less efficient markets.

When selecting and measuring long-term performance, further research could take into account the profitability, solvency and operational capacity of firms. All of these metrics are taken into account in the consideration of long-term performance to arrive at a better indicator of a firm's long-term M&A performance.

Further research could choose different control variables to explain the impact on performance when comparing long-term and short-term performance. Alternatively, variables that have strong explanatory power for both long-term and short-term performance could be selected for analysis.

China's capital markets are still imperfect compared to those of developed countries. As a result, cash and equity payments dominate the payment methods. Cash payments, in particular, are overwhelmingly dominant in terms of volume. Further research could focus more on other payment methods, such as asset payments, in the analysis of developed markets.

This paper only examines the impact of different payment methods on the performance of Chinese companies. Further research could be extended to an international context to analyse whether different payment methods have different effects on firms in different countries and markets. It is also possible to determine which payment methods are more appropriate for firms in different business environments to help improve their M&A performance.

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