Nijmegen, June 2019

The Moderating Influence of Multiple Directorships on the Merger and Acquisition Target Size Effect

Master's Thesis in Corporate Finance and Control

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Abstract

This study poses to identify the possible moderating effect of multiple directorships on the target size effect in China. Previous studies have found that target size impacts merger and acquisition (M&A) performance negatively, and therefore poses that smaller targets are more efficient, based on a purely U.S. study. Furthermore, the effect of multiple directorships on M&A performance is unclear in prior literature. This study uses an OLS event-study regression in which the following is found: [1] The target size effect does not hold in China. Moreover, it is found to have the opposite direction. [2] Multiple directorships only influence M&A performance directly in the long run. [3] Most importantly, multiple directorships only influence the target size effect positively in the long run, but this effect is economically negligible. This study contributes to the literature by indicating that cultural differences are important when generalizing theories. Furthermore, only the long-term effect is significantly important. Practitioners can use these results to better coordinate their M&A strategies and achieve higher M&A performance. Future researchers are expected to take into account cultural differences, and might even explore these differences further. Furthermore, they can use better proxies for target size or focus on multiple directorships in more detail.

Key words: Mergers and Acquisitions, M&A performance, multiple directorships, cultural differences, target size effect

Table of Contents

Introduction

"Economists, political scientists and emerging market pundits have been talking for decades about the coming of the Asian Age, which will supposedly mark an inflection point when the continent becomes the new centre of the world" (Financial Times, 2019). The Asian markets have become increasingly more influential since the turn of the century, with the Chinese and Indian markets taking a predominant role in particular. China currently accounts for around 19 percent of the total world's output and is the leading country in terms of purchasing power parity (PPP) (Financial Times, 2019). Not only trade is becoming more common, but also macroeconomic sound policy, saving and foreign direct investment (FDI) are increasing in size (Financial Times, 2019). A result of this is the evolution of mergers and acquisitions (M&A) inside China since the early twentieth century, when Chinese companies started expanding their market share by acquiring their competitors (Grave, Vardiabasis & Yavas, 2012). By becoming bigger and consolidating, M&A enabled these Chinese companies to become increasingly more efficient. In the present day, Chinese multinational companies use M&A to diversify their markets and the M&A market they operate in has become the second largest recipient of FDI (UNCTAD (2007) World Investment Report 2007; Wang 2009). The current research in the Chinese market shows that this market differs significantly from the American and European market, due to different cultural, social and legal structures (Boyle & Winter, 2010). Therefore, this study will take several M&A theories of the western world and test these in a Chinese setting. More specifically, a focus will be put on how M&A performance differs for Chinese acquirers between different Chinese targets.

Within the M&A literature there has been a lot of debate whether the acquisition of small companies or large companies yields better results. Small targets can bring innovative technologies to the portfolios of large acquirers, which can be very profitable (Maney. Hamm & O'Brien, 2011). Furthermore, even though small firms do not generate large excessive cash flows, they have higher cash to total assets ratios than large firms (Moeller, Schlingemann & Stulz, 2003). Research of Vijh and Yang (2012) has identified that the acquisition of small firms within the United States yields larger abnormal returns for the acquirer than the acquisition of large firms, what they call the target size effect. They state that both in absolute returns and in relative returns of acquisitions of both small and large targets, small targets outperform the large targets for both stock, mixed and cash acquisitions (Vijh & Yang, 2012). Thus, small targets might be more desirable to consider for acquisitions than larger targets, due to their easy incorporation into the firm and often innovative technologies that they developed (Maney et al., 2011). This is referred to as the target size effect.

However, M&A theories such as the target size effect have been criticized for not fitting settings outside of the United States (Cartwright and Schoenberg, 2006). Since most theories about M&A performance have been located in the U.S. (Lu, Tsang & Peng, 2008) and not so much in China, one has to be careful to simply copy the theories to other settings (Cartwright and Schoenberg, 2006). Therefore, it may not be possible to generalize western theories to the Chinese setting, without looking closer at the conditions

that drive M&A in this market (Li & Peng, 2008). The current theories focus too much on economic and financial explanations to be relevant to the more social setting and relational embeddedness of China (Cartwright & Schoenberg, 2006). Understanding how these two markets differ will enable research to test and generalize U.S. based theories to a Chinese setting better. This is crucial for both Chinese-U.S. cross-border M&A (Cooke, 2006; Peng, 2006) and intra-Chinese M&A (Zhou, Guo, Hua & Doukas, 2015). The reason these results cannot be generalized properly is due to the atomistic view of separating firms from their environment and not taking into account the difficulties they might have in finding the correct targets or partners (Yang, Sun, Lin & Peng, 2010). This atomistic view states that firms can be looked at as individual and unrelated entities, and relational, social and other factors are not that important to take into account (Gulati & Gargiulo, 1999). Research has found that these factors are important to take into account when measuring M&A performance (Cooke, 2006, Peng, 2006; Yang et al., 2010).

Since the focus of this study is the inter-Chinese M&A market, social and relational factors need to be accounted for to at least some extent. To do so, this study considers a form of acquirers' social capital in the broadest sense of the term, which considers how an acquirer that is conducting M&A can use its relations or networks in this acquisition process (Garguilo & Benassi, 2000). More specifically, multiple directorships will be looked at, which takes into account whether a director of the board of directors of the acquirer also holds a concurrent position at another board, creating a board interlock. Board interlocks are situations where a director of one company also holds a seat on the board of another. A multiple directorship emerges when a member of the board of directors of a company also holds a position in the board of another company, creating a board interlock (Tuschke, Sanders & Hernandez, 2014). Multiple directorships are found to have an important impact on managerial decisions such as acquisitions or mergers (Beckman & Haunschild, 2002). Multiple directorships have an important factor in M&A decisions both in the U.S and in China (Peng, Zhang & Li, 2007), and are thus the form of social capital this study will consider.

Prior research on the topic of multiple directorships has yet to evaluate whether a positive or negative effect on firm performance is present. Moreover, the effect of multiple directorships on M&A decisions as one of the corporate strategies is also still not clear (Liu & Paul, 2015). There is a discussion going on in the literature of multiple directorships and M&A, whether multiple directorships have a positive effect on firm and M&A performance, or a negative one. Having more directorships can signal a director's experience and reputation, which is referred to as the reputational view of multiple directorships (Ljungqvist & Raff, 2017), but can also limit the director's ability to properly monitor the firm, which is called the overcommitment view of multiple directorships (Fich & Shivdasani, 2006). Commonly, a director is referred to as busy if it holds three or more directorships (Fich & Shivdasani, 2006), which is found to be optimal, maximizing the net benefits of multiple directorships (Bar-Hava,

Feng & Lev, 2013). This study will incorporate multiple directorships as a moderating variable, to study the effect of director interdependences on the target size effect of M&A.

There is a clear research gap in the literature of M&A performance. Not only has there been insufficient focus on the Chinese M&A markets (Peng et al., 2007) when building theories on M&A performance, such as the size effect, but also has the effect of multiple directorships not yet been linked to M&A performance. Of course are there plenty of M&A performance studies out there, and the effects of multiple directorships and director busyness have been studied widely by previous research on factors such as firm performance and M&A activity, (Cotter, Shivdasani & Zenner, 1997; Reagans & Zuckerman, 2001; Peng et al., 2007; Burt & Opper, 2017; Ferris, Jayaraman & Liao, 2018), but to the best of my knowledge, is this the first paper of its kind to investigate the moderating influence of multiple directorships on the target size effect of M&A acquirer performance. Having multiple directorships can influence the target size effect as discussed above, since smaller targets in China are less likely to have multiple directorships, due to their limited capacity, credibility and creditworthiness, and their tendency to exploit their networks in order to build their company (Fletcher & Harris, 2012; DePamphilis, 2015).

Following the literature, a research question is formed: *How do multiple directorships influence the target size effect of Merger and Acquisition acquirer performance within the inter-Chinese M&A market?*

This study finds that the target size effect does not hold in China. Not only is the effect not present in the data, an opposite reaction of M&A performance to target size is found in both the short- and the long-term model. Furthermore, having multiple directorships is found to have no effect on M&A performance directly, indicating that having more directorships on average on a board does not impact the reaction of the market to the announcement of the takeover (Zollo & Meier, 2008). On the long run, however, a positive relation between multiple directorships and M&A performance is found, implying that the potential synergies are realized more easily or to a higher degree, compared to when these directorships are not present. The theories behind multiple directorships find conflicting results of their effect on M&A performance. This study proposes a solution to these conflicting results, as no effect is found in the short-term model, and a positive effect is found in the long-term model, indicating that the difference in scope might explain the different findings in literature. This has also been suggested by Ferris et al. (2018), who state that the effect of multiple directorships only become clear in years one and two after the announcement of a takeover. The effect of multiple directorships on the target size effect is found to be positive and significant in the long-term model, indicating that even having more directorships positively influences the effect that target size has on M&A performance.

This has several implications for practitioners in the field. First of all, this paper emphasizes that theories in the west are not always expected to hold in other countries as well, due to factors such as cultural differences (Cartwright and Schoenberg, 2006). The target size effect, as stated in the United States is

found to not hold in a Chinese setting, and even have a reverse significant effect. Secondly, managers that are currently engaged in inter-Chinese M&A can use these results to determine whether acquiring a small firm is more advantageous than merging with a large firm from the view of acquirer M&A performance. In this sample, firms are found to experience better M&A performance with the acquisition of a larger target. In line with Moeller et al. (2003), this study finds that M&A performance is even higher if the acquirer itself is smaller. Lastly, managers can learn from the conclusions about whether having a certain level of directorates leads to higher performance. In the short run, having more directorships can reduce the reaction of the market to the announcement of the takeover, whereas in the long run, it can improve M&A performance.

The remainder of this thesis is structured as follows. In the following chapter, a literature review on the target size effect is given and the moderating role of multiple directorships is discussed further. In the third chapter, the sample and model of the study are laid down, including the measurements of variables and the research methodology. Then, in chapter four, some descriptive results, the regression results and robustness checks are explained. After that, this thesis will end with some conclusions, discussions, limitations and suggestions for future research.

Theoretical Framework and Hypotheses

Target Size Effect

Prior research has found contradicting results in the field of the target size effect. This effect, as named by Vijh & Yang (2012), states that acquiring small firms leads to better M&A performance than does acquiring large firms. In theory, two opposing views exist. On one side, small firms offer only a small increase in revenues, and will therefore not be very attractive to growth-seeking multinationals (Maney et al., 2011). These small firms are also better able to spot and reject overvalued acquirer stocks, in which case the acquirer would have signaled to the public that it perceives its stock as overvalued (Vijh & Yang, 2012). On the other side of this reduction in targetiveness stands that small targets are less overvalued than the acquirers, making an acquisition potentially profitable. Furthermore, with the notion that small targets are better able to spot overvalued stocks and will accept the deal with the least overvalued acquirer, the negative reaction of the market to the acquisition will be lower, and positive acquirer returns are found (Vijh & Yang, 2012). In comparison to large targets, an excess return difference of as much as 22.5% is found. When looking at choice of payment method this size effect matters too. Performance is found to be greater for stock-only acquisitions than for mixed payment methods, using both stock and cash to pay for an acquisition, and even greater than cash-only payments (Moeller et al., 2003; Vijh & Yang, 2012; Yang, Guariglia & Guo, 2017). This size effect is amplified when small firms are the targets of the acquisition (Vijh & Yang, 2012).

The target size effect might occur for several reasons. One theory behind the target size effect states that small firms operate in a different way than large firms do. This would imply that management would set different goals and focus on different aspects of operating the company (Fletcher & Harris, 2012). Therefore, directors of smaller companies might not be focused on protecting their company from potential takeovers by, for instance, using takeover defences such as poison pills, and thus becoming attractive takeover targets. This difference in operation is found to originate in the different business model these companies have. Starting or immature firms are most likely to follow an effectual business model instead of the causal model of large and mature firms (Sarasvathy, 2001; Dew, Read, Sarasvathy & Wiltbank, 2009). This effectual business model is first introduced by research of Sarasvathy (2001), stating that entrepreneurs in immature firms operate differently from managers in mature companies. These entrepreneurs act with four principles in mind. First, they do not choose to follow the decisions that generate the highest return, but rather they choose for decisions that create more options in the future, from an affordable loss perspective. Second, they reduce uncertainty by committing in alliances with stakeholders instead of taking a more competitive viewpoint. Third, they try to exploit contingencies and unexpected market situations rather than to exploit expertise and comparative advantages. Lastly, they try to control future situations, rather than to try to predict them (Sarasvathy, 2001).

In China, this difference in operations of a firm between smaller and larger firms is also present. Guanxi is found to be more common in large firms, than in smaller firms. The reason for this is that large firms have the time and resources to maintain relations, whereas starting entrepreneurs are mostly depleting these relations for the benefit of starting their company (Burt & Burzynska, 2017). Directors of smaller companies do not focus on maintaining their guanxi, as their priorities are different. These managers focus more on the daily operations of their firm and trying to grow bigger than on the creation of networks and guanxi (Sarasvathy, 2001; Hines, 2007), indicating that in China smaller companies operate in a different way than larger companies as well. Since the focus of smaller companies in China is different than that of larger companies, it might be the case that manager focuses less on protecting their company from takeover threats and becoming more attractive takeover targets, as they are preoccupied with the daily operations of their firm to a bigger degree. This might be one of the causes of the target size effect, as a small firm that is not looking to maximize returns and does not put up a competitive stance in the market might be more likely to be undervalued (Vijh & Yang, 2012). If a company is relatively undervalued compared to the other companies in the industry, it might have a higher targetiveness. A companies' level of targetiveness indicates its desirability in the M&A market. Thus, a company that has a higher targetiveness is more likely to become a more suitable takeover target (Vijh & Yang, 2012).

Another theory states that smaller firms simply do not have the capacity, credibility and creditworthiness that large firms have (DePamphilis, 2015). Smaller firms would therefore not be able to obtain bank loans without paying lots of interest, or be able to afford a large-scale market research in their industry. This would reduce the profitability that these companies have, compared to firms that do have the capacity, credibility and creditworthiness to do so. In this case, acquiring a small firm would then enable the acquiring company to use the acquired companies' full potential, since efficiency would increase (DePamphilis, 2015). This would create substantial operating synergies, and thus be profitable in the long run. However, smaller firms are found to try to adopt the corporate strategies of large enterprises. One example is the imitation of M&A deals that make the news with large deals that change the market and industry they are competing in (Abrahamson, 1991; Moeller et al., 2003; Grave et al., 2012). This means that even though the smaller firms do not have the capacity, credibility and creditworthiness that large firms have, they still try to operate in the same way, reducing their profitability and increasing their targetiveness. For Chinese companies, similar results are found. One of the main reasons behind M&A in China is due to the empire building activities of managers. Empire building activities imply that a manager of a firm uses excess cash reserves or equity to finance big mergers and other large acquisitive strategies in order to gain a better reputation as a manager (Martynova & Renneboog, 2009). These types of activities are found to decrease firm value, and empire building motives often lead to value-decreasing mergers and acquisitions. But this implies that large rather that small targets are bought. A manager that initiates an acquisition of a smaller firm is more likely to do so based on

efficiency or targetiveness reasons than be driven by empire building. Therefore, acquiring smaller firms would be beneficial. The market would respond positively to the acquisition being likely to not be driven by empire building, but rather efficiency motives, and long-term synergies can be realized.

Information availability is also a widely considered theory behind the target size effect. Directors of smaller firms have less and different information available than do directors of large firms. Information availability is an important factor of the daily operations of a firm. Knowing how well, and how, competitors in the market operate, could drive an entrepreneur to change its business model or prices (Sarasvathy, 2001). Larger firms have the ability to gather and purchase information about their competitors and possible takeover targets, whereas smaller firms do not (Haunschild & Beckman, 1998). This can result in smaller firms not knowing their true value, being more likely to be undervalued in the market and thus becoming a desirable target for takeovers (Chatterjee, John & Yan, 2012). Smaller firms are also found to use different types of information, as they tend to use readily available sources, such as the internet and trade journals, for gathering information, since they do not have the time and liquidity to afford significant information gathering in their markets (Reed, Walsh & Grice, 2002). In China, information about competitors and the market is somewhat harder to gather, due to the lower transparency of the operations of Chinese local companies. Therefore, a critical due diligence toolbox has to be developed before acquiring a Chinese company (Boyle & Winter, 2010). Examples of issues that may arise are: ego-driven local management, difficulties with value propositions and valuation methods, different enforcement and concept of law, targets looking for competing offers etc. (Boyle & Winter, 2010). Since information is even harder, and thus more expensive to gather, companies need to dedicate even more funds to stay informed, increasing the gap in information availability between large and small firms in China. The smaller companies then have even higher levels of targetiveness and thus the target size effect should still be present.

Lastly, the differences in networks could explain why the target size effect exists. Having a bigger network could increase the information that a firm has available at any time. If, for instance, a firm has an alliance with another firm, relevant information could be shared and information gathering activities could be combined and coordinated (DePamphilis, 2015). Larger firms have the resources to set up these alliances and networks, whereas smaller firms might not. Nonetheless, smaller firms in the U.S. rely heavily on networks as their core source of knowledge and information in the markets (Johanson & Vahlne, 2003; 2009). Having a relevant network could thus greatly increase the information availability that a firm has, and thus be better able to be informed about possible takeover threats (Fletcher & Harris, 2012).

In China, this effect might be even stronger. To explain this, the typical Chinese concepts of guanxi and mianzi need to be taken into account. These two aspects of Chinese culture are rooted so deeply that

they will most definitely affect business roles within a Chinese company (Hines, 2007). Guanxi finds its foundation in reciprocity of gifts and favors. Chinese spend a large amount of time assembling and maintaining a strategically chosen social network of friends, family and acquaintances (Hines, 2007; Burt & Opper, 2017). This network is formed using three levels: the first level is for family only, the second is for friends and acquaintances and the third for strangers (Burt & Burzynska, 2017). The level of trust and reciprocity is based on the level of guanxi the relationship is based in, and based on experiences one can either ascend from the third to the second level or vice versa. Mianzi ('face') refers to reputation and social standing. If one fails to maintain guanxi, one loses face and thus reputation. This especially holds for business roles as well, in which one is to respect the hierarchy and not treat everybody equally, making it important to consider as part of due diligence, even within China (Hines, 2007; Boyle & Winter, 2010).

Since networks are very important in Chinese corporate culture, they might increase the target size effect. In China, smaller firms are found to rely heavily on networks to get their businesses started. In their personal life, entrepreneurs have gathered a big network, following the concepts of guanxi and mianzi (Hines, 2007). After they get their business started, these entrepreneurs try to make use of this network to expand their business further, limiting their levels of guanxi (Burt & Opper, 2017). Examples of this are using political connections to receive permits and bypass regulations (Song, Yang & Zhang, 2011), or using friends and family in bigger organisations to give advise or even buy their company. When these firms get bigger, not much of their network is left, as most of it has been exploited to grow the business. These entrepreneurs do not have the time, funds or experience to build this network back up (Fletcher & Harris, 2012), limiting the information that this entrepreneur has available and increasing the takeover threat to his company.

For any of the theories behind the target size effect that are discussed in this paragraph, a negative relation between target size and acquirer performance is expected. The Chinese setting influences this relation slightly, as for the difference in operations, capacity and information availability between small and large firms, the effect should be similar. For the difference in networks, the size effect is expected to be even stronger. Therefore, the acquirer is expected to have better M&A performance if the target is small, resulting in the first hypothesis: *H_1: The size of the target is negatively associated with short- and long-term acquirer intra-China M&A performance.*

The Moderating Influence of Multiple Directorships on M&A Performance

Current research on the effect of multiple directorships and director busyness on firm and M&A performance is divided. Mainly, there are two competing theories for which researchers have found conflicting results. On the one hand, there is the 'overcommitment view' of multiple directorships, which states that multiple board appointments create busy directors, that are over-committed in time (Liu & Paul, 2015). These busy directors are then not able to fulfill their duties, mainly consistent of monitoring and advising, as they have to allocate their time over all the boards, they hold a position in (Ferris et al., 2018). These directors are not capable to provide the careful monitoring that they are required to do (Ferris, Jaganathan and Pritchard, 2003), their monitoring abilities will be diminished (Fich & Shivdasani, 2006), which has a negative effect on the performance of a firm (Liu & Paul, 2015). On the other hand, research argues that holding multiple directorships signal the directors quality and reputation as an expert monitor and advisor (Liu & Paul, 2015). This 'reputational view' of multiple directorships states that directors gain valuable experience from having multiple board appointments, gaining skills and competencies that make them desirable board members (Ferris et al., 2018). This experience makes them better monitors, such that they can monitor multiple firms efficiently at the same time (Ljungqvist & Raff, 2017). These directors are expected to positively impact firm performance through their certified human capital (Liu & Paul, 2015).

Since this study is interested in the moderating effect of multiple directorships on the target size effect, the four theories that are discussed in the previous section are focused on. For each of the theories behind the target size effect, the effect of multiple directorships on these theories is theorized. The first theory considers the difference in operations between smaller and larger firms. The second theory looks at the difference in capacity between smaller and larger firms. The third theory focusses on the difference in information availability, and the fourth theory studies differences in networks.

Because smaller firms are found to operate in a different way compared to large and mature firms, they focus on different aspects of running a business. Therefore, smaller firms might not be properly protecting themselves from takeover threats, and thus become more attractive takeover targets. This becomes even more apparent when multiple directorships are involved. In line with the overcommitment view of multiple directorships, directors have less time to monitor a firm if they hold more directorships. Recent findings suggest that the market responds negatively to the announcement of a merger by a busy acquirer board, due to their perceived inability to provide oversight to realize the anticipated synergies of the merger (Ferris et al., 2018). The daily operations of the firm might shift from managerial goals, resulting in the firms becoming less efficient, because when firms are monitored less, their daily operations might not be in line with managerial goals and KPI's of the firm (Cashman, Gillan & Jun, 2012). As discussed earlier, less efficient firms are more desirable takeover targets (Zollo & Meier, 2008). For smaller firms, this might be less important, as they are less likely to have multiple directorships. Furthermore, the monitoring of a smaller firm is relatively simple, and not very time-

consuming, compared to larger firms (Cashman et al., 2012). Since the monitoring of smaller firms is less complex, directors of a small firm that hold multiple directorships can allocate more time to protect the firm from potential takeover threats, for example by using poison pills (DePamphilis, 2015), and thus reduce its desirability in the market. This would reduce or flip the target size effect as predicted earlier.

In China, the reputation of directors is even more important. Di Pietra et al. (2008) state that the board of directors vary considerably between different countries, firms and industries, and they are not the only ones (Ferris et al., 2018). Their study is based in Italy, a country that is known for family-like relations and low legal protection, much like China (Hines, 2007). Here, too, director busyness is associated with superior market performance of firms, consistent with the reputational view of multiple directorships. Di Pietra et al. (2008) find that in these family-like settings with low legal protection, like Italy and China, directors that are well connected and have reputable social, political and corporate links are considered more desirable. They are perceived to be expert monitors and they signal successes in their business activities to the markets (Di Pietra et al., 2008). This effect is enhanced further if the markets are relatively less developed and information is relatively less available. Investors in China rely relatively more on the reputation of directors and companies, and thus their effect is amplified (Zhang & He, 2014). When focussing on smaller firms, who are less able to signal a good reputation due to them having very little historical records to show, a lesser degree of efficiency is expected. The markets will perceive these smaller firms to be inefficient, as they are not able to project a good reputation. Acquiring firms will notice this inefficiency and see the potential for synergies in the case of a takeover (DePamphilis, 2015). These smaller can use multiple directorships to signal that they do have a good reputation and thus reduce the target size effect.

Secondly, since smaller firms do not have the capacity, credibility and creditworthiness to obtain effective bank loans or contracts, making the firms inefficient. Larger firms notice that they can gain efficiency synergies by acquiring the smaller inefficient firms and operating them with the capacity, credibility and creditworthiness of the combined firm. This makes smaller firms more desirable takeover targets. When one considers multiple directorships, the capacity, credibility and creditworthiness of a firm becomes bigger. A director becomes more reputable, increasing the credibility the board of a firm has (Ferris et al., 2003). A director that is desired to serve on multiple boards is also more likely to be an experienced monitor (Ferris et al., 2018), increasing the efficiency of the board. A better-connected board of directors might also be able to bargain better interest rates on loans or signal better credibility and creditworthiness of a firm in another way. These findings all suggest that a better-connected board of directors might increase efficiency, credibility and creditworthiness, and in line increase the firm's ability to efficiently realize the synergies of a takeover. For smaller firms, who are most likely to have less connected boards of directors, the credibility and creditworthiness of the firm will be relatively low,

making them more desirable targets for other firms. These firms would be interested in the potential synergies that may be present due to the target being ineffective (DePamphilis, 2015).

Looking at China in more detail, it becomes clear that the unique setting and large cultural differences make it difficult to generalize theories from the United States. One of the most distinct cultural differences is the importance of trust, cohesion and reciprocity (guanxi). In China the firm that maintains guanxi is found to be most efficient in the market they operate in (Hines, 2007; Yang et al., 2010; Burt & Opper, 2017). An increased network density, in the form of corporate interlocks and multiple directorships enables actors to develop levels of trust, and thus combine individual interests and aim for collective actions (Coleman, 1988), in line with the practice of guanxi. Having high levels of guanxi enables these firms to use their connections to gather much more information about the markets than their competitors that do not have high levels of guanxi. Especially in China, where markets are relatively less developed (Lin, Peng, Yang & Sun, 2009), and investors are more reliant on reputation and trust, guanxi plays a major role in explaining market behavior. Furthermore, failing to reciprocate, or misusing the trust and reputation that has been given to a director or company will result in losing face, or 'mianzi'. For Chinese directors, this is not only harmful to future business opportunities, but also shameful on a personal level. Hines (2007) already warned for empire building activities of Chinese corporate managers, and the shadow side of Chinese corporations, including bribery, corruption and fraud. Thus, managers will try to maintain guanxi, in order to reap the benefits of having a good reputation. This will in turn enhance the credibility of the firm, reduce its inefficiency, and thus reduce the potential synergies that can be realized by acquiring firms. Therefore, smaller firms in China that use multiple directorships, will reduce the target size effect.

The third theory behind the target size effect considered the difference in information availability between small and large firms. Since firm size is likely to be related to information access (Fletcher & Harris, 2012), as large firms have the means and resources available to acquire more and better-quality information (Haunschild & Beckman, 1998), larger acquirers are more likely to choose the right acquisition target. Choosing the right target can be very important for large corporate strategies, such as M&A decisions, as this choice will be the basis of both market reactions to the announcement and long-term operating performance (Vijh & Yang, 2012). Cai and Sevilir (2012) examine whether a board connection could increase M&A profitability. They state that having a board connection improves information flow between the two firms, enabling them to better understand each others business. This can in turn lead to better M&A performance, as acquirers that hold an information advantage are better able to negotiate and receive better terms and prices (Cai & Sevilir, 2012). Increased information availability between the two firms can also reduce transaction costs, increase synergy potential and lower the need for investment banks and their fees (Cai & Sevilir, 2012). Another problem that would be reduced with better information flows, is that of the winner's curse. This theory states that the firm that eventually acquires the target has overpaid, since the other bidding firms that were aware of the true

value of the target did not overbid the winning firm, who was unaware of this (Peng, 2012). The fear of this winner's curse can deter competing bidders if the target firm has a close connection with one of the bidders, who is thought to be better informed about the true value of the firm (Kagel & Levin, 1986). Taking into account the target size effect as discussed above, it becomes clear that smaller targets are more profitable for acquiring firms to focus on, since they are less able to access information and are therefore likely to be uninformed about potential takeover threats in the market (Zaheer & Bell, 2005; Yang et al., 2010).

When multiple directorships are added to this discussion, this effect is amplified, as firms tend to have better information available if they have more board connections. Firms that are larger, tend to have more directorships that can be used, indicating that they have more information available. Therefore, not only the means of acquiring information by, for instance, doing market research could create a difference in information availability between firms, but also their number of directorships could. Smaller firms are less able to acquire such directorships, since they do not have the capacity or credibility to do so. The information that is received from these connections becomes more valuable if less alternative sources of information are available (Haunschild & Beckman, 1998). This results in board connections being one of the most important sources of information to consider when focussing on small firms, as small firms are found to have little means to gather information in other sources (Sufi, 2007; Pyles & Mullineax, 2008). Thus, small firms are unable to hold lots of multiple directorships, which are an important source of information to them. This will possibly enhance the target size effect, as smaller firms are even less able to access information that might help them protect themselves from takeover threats.

In China, being well connected can lead to several benefits that would not have been present in the U.S. It is very common for managers of Chinese firms to be connected to local government officials or governmental companies. These connections can grant the managers certain types of (illegal) information that can help them perform better. For M&A related decisions, Chinese firms are required to pass many bureaucratic tests and get permissions for which connections with political officials can be very helpful (Liu, Luo & Tian, 2016). Corporations thus have large incentives for bribing government officials, as an important channel to establish political connections (Liu et al., 2014). These connections can be used to broaden the network of a firm and thus increase future firm performance, efficiency (Beck & Maher, 1986), and value (Cheung, Rau & Stouraitis, 2012). Using bribery and corruption in these cases can be a way to surpass the negative effects of low government and legal quality (Meon & Sekkat, 2005). Therefore, knowing the right persons can help decrease the bureaucratic costs of M&A, and thus increase M&A performance. Since smaller firms have far fewer multiple directorships, their connections to local government are likely to be weak. Acquiring these firms would be beneficial, as synergies based on efficiency could be realized.

However, there is also a negative side to being well connected, or even partially owned by the government. Chinese firms in the past were likely to be affiliated with the Chinese government is through State-Owned Enterprises (SOEs). They are administered by the central government, allowing them to enjoy certain privileges, in the form of government finance, subsidies and regulations (Song et al., 2011). Even in firms that are not or no longer state-owned, still a large portion of shares are held by the central government (Megginson and Netter, 2001). SOEs are perceived to be less efficient in the M&A markets (Zhou et al., 2015), and are even found to be worse performers overall (Dewenter and Malatesta, 2001). Even though the SOEs benefit from political privileges and connections, their takeovers are perceived to be less profitable than their publicly-owned counterparts. One reason for this can be found in the strong incentive of the local governments to intervene in daily operations of the firm, regulating regional economic and social welfare (Yang et al., 2017). Only when SOEs acquire other SOEs, the market reacts slightly positively in the long run. Since M&As have to be approved by the government, SOEs acquiring other SOEs are prone to corruption and wrong incentives, and the market reacts accordingly. If the merger is found to be value-creating in the long run, the market will slightly adapt its reaction over time (Fan, Wong & Zhang, 2007; Zhou et al., 2015). This would imply that being well connected to the government also has its downsides, and can indeed reduce acquirer M&A performance. The target size effect would be reduced or even have a reversed direction in this situation, as acquisitions of smaller firms could be perceived as initiated by the government under perverse intentions.

The last line of reasoning behind the target size effect takes into account the value of networks. Even though networks and information availability are moderately related to each other, these two theories should not be considered as one. Having a better network enables a firm to efficiently gather information about the market or industry it operates in. This view originated from board connections being a form of networks, and networks are found to be important information sources for firms (Fletcher & Harris, 2012). However, having a bigger network also enables them to acquire firms in their network more efficiently, as these companies already are connected to a certain degree, and synergies might be easier to realise. The formation and maintaining of a network are important in M&A markets (Hines, 2007), as the use of these networks can lead to better M&A performance. One example of this is the choice of takeover target. A poor takeover target is likely overvalued, its announcement will be perceived negatively by the market and long-term synergies will not be realized (Moeller et al., 2003). A good takeover target will do the exact opposite, as it can bring valuable resources, such as technology, information or location, to the acquiring firm (Maney et al., 2011). Choosing a takeover target that is within a firm's network, could result in better M&A performance, as this relevant information about this target is already known to the acquirer. Since larger companies are found to have larger networks as well (Yang et al., 2010), they are most likely to be prepared for any takeover attempts. Their network can help them protect themselves from being taken over. Smaller firms, which have smaller networks,

can be easier targets, as these firms are less able to do so. Having a connection with a target can make it possible for the acquire to realize long term synergies better. Therefore, these smaller companies are better targets for the acquirer to consider.

In China, this effect is amplified. Cultural differences caused by guanxi, even within China, can change market reactions of M&A announcements, as directors or companies with a bad reputation are punished worse in China than they would be in a European setting (Boyle & Winter, 2010). If reputation is a driver of M&A performance in China, it is only logical that theories from the United States are not to be simply copied to the Chinese setting, as it might change the effect and outcomes of these theories (Cartwright and Schoenberg, 2006). Furthermore, since having guanxi is matched to having a better network, and thus having more board interlocks (Garguilo & Benassi, 2000), it may be indirectly linked to M&A performance as well. Evidently, if this network extends further than simple alliances and trade agreements, but also includes board interlocks, any eventual merger between these firms is bound to be more efficient (Di Pietra et al., 2008). This might indicate that the difference in network size between smaller and larger firms is even bigger in China as it is in the U.S.

Even though the typical Chinese concepts of guanxi and mianzi promote harmony, reciprocity and hierarchy, they are also closely linked to an increased likelihood of corruption and bribery (Hines, 2007; Liu, Luo & Tian, 2016). Therefore, extensive due diligence is required in order to align the target with the acquirer business culture, as this may cause the integration of a firm to be more difficult and thus influence M&A performance (Haspeslagh & Jemison, 1991; Zollo & Meier, 2008). This would increase the pre-announcement costs of a merger. Similar problems arise with Chinese firms acquiring other Chinese firms, as the lack of transparency of the target's operations, and thus the lack of knowledge of the true value of the target (Chatterjee et al., 2012), imply that the takeover is likely to not create value (Alexandridis, Antypas & Travlos, 2017). If these integration issues are found to be too great, firms might choose to forgo M&A completely, and rather focus on a different form expansion (Stähler, Ryan & Raff, 2007; Wang, 2009; Grave et al., 2012). Furthermore, China's institutional framework is not as developed as the ones that can be found in the United States or Europe, making market-based transactions like M&A riskier (Peng, 2003; 2006). Any of these factors can increase the cost of a merger or acquisition, reducing the performance of the M&A. This will be even more important when looking at the size effect. Smaller firms have smaller networks, and thus need to rely more on corruption and bribery to achieve success. These factors can greatly reduce the profitability of the merger in the long run (Liu et al., 2016). Therefore, the target size effect is expected to be reduced greatly in the Chinese setting, when multiple directorships are involved.

In short, the target size effect is clearly influenced by having multiple directorships. For some of the theories behind the target size effect, this influence is positive, whereas for some other theories, this effect is negative. From the literature, it becomes clear that the effect of multiple directorships does

differ between large and small firms, due to the capacity and information availability of these firms (Fletcher & Harris, 2012). This is important to consider, as small firms might not be aware of potential takeover threats and large firms might be able to use the information to find the best acquisition target (Zaheer & Bell, 2005). Large firms are found to have superior knowledge of the markets they operate in, whereas small firms tend not to. Furthermore, in the Chinese setting, guanxi is another factor that is regarded as important. Guanxi is mostly found in larger firms, that are able to devote more resources, like time, to maintain high levels of social connections and reciprocity (Hines, 2007). One example of these social connections might be a multiple directorship. Prior literature is yet unsure what the effect of multiple directorships is on the target size effect in China. Therefore, two hypotheses are set up: *H_{2a}: Acquirer multiple directorships have a negative effect on the target size effect of acquirer inter-China M&A performance.*

H_{2b}: Acquirer multiple directorships have a positive effect on the target size effect of acquirer inter-China M&A performance.

Research Design

Sample

The total sample of this study will incorporate all inter-Chinese deals that are extracted from the Thomson One Eikon database. In this database, the deal screener is used to generate a dataset for inter-Chinese M&A deals from 2006 to 2017. The year 2006 is chosen, as the M&A deal data before 2006 is not as reliable as after according to the Eikon deal screener, since announcement dates before 2006 are only estimated and not recorded, therefore market reactions are likely to be measured at the wrong date. The end year of 2017 is chosen to allow for a one-year estimation of long-term performance of the deal. Furthermore, the sample is reduced further to only incorporate deals in which both the acquiring company and target company are Chinese. Next, only mergers and acquisitions, and not asset restructures, controlling interests and other investments are considered, as the market reaction to these types of investment might differ from that of M&A, since these investments do not fully acquire the target, but only parts of it. Finally, only completed deals are considered relevant. An incomplete deal might not show the actual long-term performance of the M&A for the acquirer, as the integration is not yet complete. The output from the deal screener considers mostly target firms that are private or subsidiaries, and no financial data on these targets is available. The type of listing status of the target is not relevant for the research on M&A performance, as has been shown by prior research (Moeller et al., 2003), but private Chinese firms have no financial data available in Eikon, and without a stock code it cannot be linked to other databases. Since this study needs a proxy for target firm size, the final deal value is used, corrected for the percentage of shares acquired. The percentage of shares acquired can be

below a hundred percent even if the type of investment is a merger or acquisition. This is the case if either the acquirer already holds some shares of the target company in its portfolio, or if a minority interest is left with either the former directors of the target or the state government. This measure of target size will yield a good proxy for firm value in the absence of financial data of the target. Cai and Sevilir (2012) also use this measure to proxy for relative size of the target to the acquirer, and reckon it is a good enough proxy if true size data is unavailable.

As stated above, the output from the Eikon Thomson One database will be linked to the CSMAR database of Chinese firms. This database contains information about Chinese markets, accounting measures and board structures and members. This database is used to access the data for the measure of board interdependence, and will be linked to the Eikon database through ISIN codes. From the Eikon dataset, Cusip codes are found, which can be transformed into ISIN codes through a formula in the system. The company output of CSMAR is linked in stock codes, which can be transformed into ISIN codes through a conversion document provided by the RU library team. These ISIN codes then form the best possible link between the two databases that are used. This is, as noted earlier, impossible to do so for firms that do not have ISIN codes (private firms), which is one of the limitations to this study.

From the Eikon deal screener database, 2.128 deals are extracted with a known value of deal value. Of these deals, only 1.904 deals are collected with a known stock code and ISIN code. This is the number of deals for the 1990 to 2019 period. For the main sample, only 2006 to 2018 are considered, resulting in 1.794 observations. When event study data is added to the dataset, 1.596 companies remain that have known data for both target size, event study CARs and board interlock data available, making this the final sample size. Some of the companies do not have data for the control variables, slightly reducing the sample used for regressions.

Methodology

With the use of these datasets and sample size, a quantitative study is preferred. Prior research has executed a simple ordinary least squares (OLS) type of regression for M&A performance quite a lot (e.g. Moeller et al., 2003; Alexandridis, Fuller, Terhaar & Travlos, 2013; Humphery-Jenner & Powell, 2014; and others), and considering the variables and their measurements below, this study will continue this trend. Each deal is considered an independent construct, and even though some firms conduct multiple deals over the timespan of the study, a lot of firms do not. It is inappropriate, or even impossible to use either time series or panel data, as mergers and acquisitions do not happen continuously. The data will be examined in a similar way to prior research, using cross-sectional OLS regressions (Humphery-Jenner & Powell, 2014; Rao-Nicholson, Salaber & Cao, 2016). The possible moderating effect of multiple directorships on the primary regression analysis of the effect of target size on acquirer M&A performance is included in the model by using an interaction effect. If a significant effect is found, an interaction effect of the moderating variable and the independent variable is said to be present in the

model (Fairchild & MacKinnon, 2009). The interaction effect is present in literature and will therefore be present, independent of statistical significance, in both models. Nonetheless, for robustness, the regressions will also be ran without the interaction effect present, and the results will be compared to each other. It might also be true that having boards with multiple directorships affects M&A performance even if the size effect does not hold, which is why it is included in the model as an independent variable.

Variables

Dependent variable

The dependent variable of this study will be 'M&A performance', both in a short and a long-time horizon, to be able to capture total performance (Moeller et al., 2003; Zollo & Meier, 2008). The short-term performance will be operationalized by looking at cumulative abnormal returns (CARs) to the acquiring company's stock in a short time horizon starting one day before the announcement and lasting until one day after the announcement, thus looking at three days in total (Moeller et al., 2003; Alexandridis et al., 2013). This variable looks at how the market responds to the announcement of a merger or acquisition while having very little information about the actual acquisition or merger (Zollo & Meier, 2008). CARs are found to be an unbiased estimate of whether a merger serves acquirer shareholders interests (Lehn & Zhao, 2006; Ferris et al., 2018) and signal value creation potential of the takeover (Liu & McConnell, 2013).

Zollo and Meier (2008) warn for the use of short-term event study windows, as they state that this type of research does not truly measure short-term performance of M&A, but rather measure the market expectation of firm performance. To be sure to measure true performance, long-term event studies can be used as a complement, which is why long-term performance needs to be a part of the study as well. Ferris et al. (2018) find a positive correlation between the market reaction in the short run and long-term M&A performance, leading this study to expect similar results. Long term M&A performance will be operationalized with the buy-and-hold return on the acquiring company's stock over a longer time horizon, which can be a good fit when controlled for size (Lyon, Barber, and Tsai, 1999), which is the case as both target and relative size are included in the regression models (see 3.4). Research has found that long term operating performance of a firm, and too for M&A transactions, is visible after less than one year (Hackbarth & Morellec, 2006; Humphery-Jenner & Powell, 2014). Even the labor market, which is known for its rigidity and slower implementation of market reactions, shows significant results after one year since a merger announcement (Ferris et al., 2018). For these reasons, this study will use a one-year period for examining long term M&A returns. The one-year return considers a window starting one day after the announcement of the merger and lasts until 252 trading days after that [+1, +253] (Hackbarth & Morellec, 2008).

The counterfactuals for this data are computed with previous returns of the company compared to the market, with the market returns being either the Shenzhen stock exchange (SZSE) or the Shanghai stock exchange (SSE), depending on the exchange the acquirer is listed. To do so, the CAPM model of counterfactuals is used, using the risk-free rate, market returns and market premia to calculate the respective beta of the acquirer (DePamphilis, 2015). More concretely, the returns from trading day -253 to trading day -42 are used for this, as Schwert (1996) identified that the period from trading day -42 to trading day -1 are considered the bid period or merger talks period (Brown & Warner, 1985), where the M&A process has already begun (Schwert, 1996; Fu, Lin & Officer, 2013; Alexandridis et al., 2017). The merger talks period is the time before the actual merger is announced, but after the acquirer and target started discussing and planning the deal. Therefore, this period may thus include biased information and expectations of the M&A due to insider trading and information leaks, and is thus excluded from the counterfactual.

Independent variables

There are two main independent variables to this study. First of all, the target size effect needs to be examined in the Chinese setting. To do so, as stated earlier, the proxy for the size of the target is chosen to be the value of the deal corrected for the percentage of total shares of the target that is acquired. The absence of stock data for the targets, due to their listing status makes it impossible to calculate target size in any other way, this is a limitation to the study. Note that the delisting effect, such that stocks are delisted and other stocks are enlisted in a certain stock exchange, in China is negligible (Zhou et al., 2015). The measure for target size is very skewed, in the sense that a far from perfect normal distribution can be found. To be able to generate better generalizable results, the natural logarithm of target size is used. This is in line with prior research that uses this method to account for skewed variables (Alexandridis et al., 2017). No outliers seem to be present in the distribution, so the measure for target size is not winsorized at any level.

The second main independent variable concerns multiple directorships of the directors in the board of acquiring firms. Multiple directorships will measure the level of relational ties the company has available during the acquisition process. Prior research has used interlocking directorates, multiple directorships and board or director busyness (Haunschild & Beckman, 1998; Gulati & Garguilo, 1999; Xiao & Tsui, 2007; Yang et al., 2010; Liu et al., 2015; Ferris et al., 2018) to measure this construct. Multiple directorships have been identified by the number of boards that board members have concurrent positions (Fich and Shivdasani, 2006; Di Pietra et al., 2008). Haunschild and Beckman (1998) focus on board interlocks with a measure of simple degree network centrality, operationalized by the total number of interlock ties to other firms. This would imply that a board of directors of a firm increase their number of board interlocks by either allowing their directors to gain appointments at different firms or simply adding more directors to the board. A measure of multiple directorships is used, following prior research (Cashman et al., 2012; Liu & Paul, 2015; Ferris et al., 2018), concerning the total number of concurrent

positions the acquiring board at the time of the merger or acquisition is holding. This measure, however, is not without its flaws (Fich & Shivdasani, 2006), but it is considered a good measure for this type of study (Haunschild & Beckman, 1998; Yang et al., 2010). For this reason, the average number of directorships a director holds are used as a more specific measure for multiple directorships.

Andres, Van Den Bongard and Lehmann (2013) warn that this type of measure might yield inconsistent results, as the relative importance of different directorate positions might differ. Just taking an average might underestimate the importance of certain directorships and overestimate the importance of others. They state that being a central player in a big network of important actors, but having only a value of one for busyness, might be at least as important as being connected to dozens of smaller firms and holding many positions that are not as time consuming. Moreover, interlocking with a firm that has a relatively large board size would mean that the monitoring activities are spread over more directors, and thus require less time per director, due to monitoring synergies (Ljungqvist & Raff, 2017). Smaller firms and bigger boards thus imply that a director can hold relatively more board seats given its time, influencing the optimal number of board seats for a director to have. Furthermore, this would imply that a director holding three directorates with smaller firms is not as busy as one holding three with bigger firms. Ferris et al. (2018) have tested different measures of board and director busyness. Their results are robust to different measures of board busyness, leading them to conclude that it is not relevant for future research like this one to go through the process of testing these different measures for board busyness and multiple directorships again.

The interaction effect that is included in the model measures the effect of multiple directorships on the target size effect and is used to answer the second hypothesis. The interaction effect is calculated by multiplying the centred values of target size with the centred values of multiple directorships. No winsorizing or natural logarithms were present when calculating the interaction effect.

Control variables

The Price-Earnings ratio is measured by the share price of acquirers at the end of the year divided by the total earnings of a firm over that same year (Vasconcellos & Kish, 1996). The Price-Earnings ratio indicates how much an investor is willing to pay for one Yuan of earnings. It is expected to have a value between twenty and twenty-five, which is considered as average (Moeller et al., 2003). The price-earnings ratio of some acquirers was found to be too high to make sense economically, even a value of 4500 was found in the dataset. Therefore, the price-earnings ratio is winsorized at the 99% level.

Leverage (Maloney et al., 1993) will be measured as the level of acquirer equity divided by the book value of acquirer assets. This value, in theory cannot become one, as it would indicate that a firm has more equity than assets, which is not possible in theory. This value should also not become negative, which would indicate a negative level of equity and thus signal impeding bankruptcy (Fuhrmann, Ott, Looks & Guenther, 2017). Since the distribution of this variable was very skewed, and thus was prone

to errors, the natural logarithm of leverage is used in the model. The differences in leverage among acquirer firms was too big to be able to use the absolute value of leverage. Furthermore, some absolute levels of leverage were reported to be negative or extraordinarily high, which is why this variable was winsorized at both the 1% and the 99% level.

Tobin's Q (Moeller et al., 2003) will be measured by the market value of the acquiring firm, divided by the total amount of assets of the firm. This total amount of assets will represent the replacement costs of the firm's assets. If the value is lower than one, the company is considered undervalued, whereas the firm would be considered as overvalued if the value rises above one. For this sample, all acquirers are expected to be overvalued, as a proper defence for takeovers and for using overvalued stock to pay for a takeover (Moeller et al., 2003; Vijh & Yang, 2012). The measure for Tobin's Q resulted in a largely skewed distribution, as the differences between firms was too big to be able to use in the model. For this reason, the natural logarithm of the Tobin's Q ratio is used as a variable. Moreover, Tobin's Q is winsorized at the 99% level, since there were some outliers in this distribution.

The Market-to-Book ratio (Dong, Hirshleifer & Teoh, 2006) will be measured by the market value of assets divided by the book value of assets. Firms scoring high on the market-to-book ratio are more likely to be overvalued. Larger firms are more likely to score high on this measure, as they have a relatively high market value of assets when comparing them to the average small company (Moeller et al., 2003). Some of the observations in this distribution did not make sense economically, such as a negative market-to-book ratio. Therefore, the variable is winsorized at the 1% level.

Furthermore, a measure of relative size is added to the model, accounting for the difference in size between the acquirer and target, so not only incorporating the size of either company, but rather a relative measure of size (Moeller et al., 2003; Vijh & Yang, 2012; Alexandridis et al., 2013). Literature shows that this variable is often significant, and explains that not absolute small targets are considered profitable, but rather relatively small targets (Moeller et al., 2003; Vijh & Yang, 2012). Even though the values of relative size were different between different takeovers and the distribution is skewed to the left, no actions were taken to account for this. Relative size is calculated by dividing the absolute size of the acquirer by the absolute size of the target. It will have a value of one when both are equally large.

Even though macroeconomic control variables such as economic cycles, industry output (Melicher, Ledolter, & D'Antonio, 1983), industry M&A activity (Nelson, 1959; Becketti, 1986; Bittlingmayer, 1987; Golbe & White, 1988), GDP and economic freedom (Ruihai, Hongmin & Lirui, 2006) are found to be important to consider in M&A performance research, only industry controls are included. This is self-explanatory when a single country is studied. An industry control for the type of deal, related or unrelated, is added to the model. A dummy variable will have a value of one if the target and acquirer are in the same industry, measured by the first two digits of their respective SIC industry codes, and zero otherwise (Ferris et al., 2018).

Lastly, a measure of acquisition experience is added to control for cognitive learning of companies. Alliances and prior acquisition experience can also be a form of information availability. The resource dependence perspective implies that firms can then use M&A to gain control over the resources in this environment that they need to survive and thrive (Oliver, 1990; Pfeffer & Salancik, 1978). Research has found that one way of coping with the environmental uncertainty is by resorting to prior acquisition experiences (Haleblian, Kim & Rajagopalan, 2006; Hayward, 2002). This way, firms can use prior acquisition experience as a source of learning (Luo & Peng, 1999), which can influence future acquisition behavior. Even prior alliance experience can be used to explain future acquisition behaviors of firms (Cooke, 2006). To take into account the effect of acquisition experience that originate from alliances, a control variable is added to the regression model. This dummy variable will have a value of one if the company has conducted a merger or acquisition before the merger or acquisition in question, based on the data from 1990 to 2019 from the Eikon deal screener, and a value of zero otherwise (Ljungqvist & Raff, 2017; Ferris et al., 2018).

Research Model

Using the OLS regression model as discussed earlier, a simple research model can be formulated. Since both target firm size, multiple directorships and the interaction effect need to be tested, all of these will be included in the model. The dependent variable is M&A performance, both in the short and the long run, because of which two models need to be examined. The first regression model will look as follows:

$$\begin{aligned}\boldsymbol{CAR(3d)} = {} & \beta 0 + \beta 1 * target\ firm\ size + \beta 2 * multiple\ directorships + \beta 3 * (target\ size \\ & * multiple\ directorships) + \beta 4 * leverage + \beta 5 * Price\ Earnings\ ratio + \beta 6 \\ & * Tobin's\ Q + \beta 7 * Market\ to\ Book\ ratio + \beta 8 * relative\ size + \beta 9 \\ & * acquirer\ size + \beta 10 * Acquisition\ experience + \beta 11 * relatedness + \epsilon\end{aligned}$$

For the long run, a similar model is used, only with a different dependent variable:

$$\begin{aligned}\boldsymbol{CAR(1y)} = {} & \beta 0 + \beta 1 * target\ firm\ size + \beta 2 * multiple\ directorships + \beta 3 * (target\ size \\ & * multiple\ directorships) + \beta 4 * leverage + \beta 5 * Price\ Earnings\ ratio + \beta 6 \\ & * Tobin's\ Q + \beta 7 * Market\ to\ Book\ ratio + \beta 8 * relative\ size + \beta 9 \\ & * acquirer\ size + \beta 10 * Acquisition\ experience + \beta 11 * relatedness + \epsilon\end{aligned}$$

To check if these models are sufficient for this study, several elements of the model will be checked. First of all, correlations between variables need to be checked, to ensure that all variables are independent and good measures, and do not pose an issue further on in the study. Looking at the correlations in table 1, it becomes clear that for the short-term model, several significant correlations stand out.

Notably, only two correlations can be labeled as moderate, whereas the other correlations all are considered low. This concerns the 0.284 correlation between market-to-book ratio and price-earnings

ratio, which is positive and significant at the 1% level and the 0.263 correlation between market-to-book ratio and Tobin's Q, which is also positive and significant at the 1% level. The correlation between price-earnings ratio and market-to-book ratio can be partially explained by the way these variables are calculated. Both measures use the market value of the firm as a numerator, since price-earnings ratio is calculated using the share price and market-to-book ratio uses the market value of assets. If a firm is overvalued, both are likely to be relatively high. The importance of these variables, however, lies in the denominator. Since both measure different aspects of conducting business, they will both be incorporated in the model. Furthermore, both market-to-book ratio and Tobin's Q are measured with total book value of assets as a denominator. The difference between these measures is found in the numerator, which is market value of assets for the market-to-book ratio and market value of equity for Tobin's Q. This might indeed cause these two values to correlate significantly with each other. Appropriate steps will be taken later to check whether this will become a problem for this model.

Furthermore, the negative significant correlation between prior acquisition experience and target size is very logical, considering that smaller firms are better acquisition targets. Acquirers that have used cognitive learning are then capable to understand that smaller targets are preferred over bigger ones (Yang et al., 2010). This gives a first indication of recognition of the target size effect in the sample. A highly significant and positive correlation is found between three-day CARs and target size. This is a first indication that the target size effect might not hold in China, since CARs are found to increase if target size increases. This correlation might pose issues with the model later on, and appropriate steps need to be taken. Next, the price-earnings ratio is found to correlate positively and significantly with target size, Tobin's Q and relative size. These correlations are economically small, but significant nonetheless. For this reason, the measure for price-earnings ratio will be examined further later on. A negative significant correlation is found between acquirer three-day CARs and deal relatedness. For these variables, further examination is needed to ensure that no statistical issues will be posed later on. Deal relatedness also has a positive significant correlation with prior acquisition experience. This is no more than logical, considering that the found correlation is most likely due to industry characteristics. Also, a negative and significant correlation is found between target size and relative size. This makes sense, as if target size increases, the relative size of the acquirer would decrease. Leverage is found to correlate significantly with Tobin's Q, market-to-book ratio and relative size. The negative correlation between market-to-book ratio and leverage is attributable to their measures. Both market-to-book ratio and leverage are measured with total amount of assets as a denominator. The negative correlation between leverage and relative size might be due to larger firms being more likely to use debt to finance their firm, whereas smaller firms and start-ups are more likely to use their own capital instead of debt (Sarasvathy, 2001). Both Tobin's Q and leverage, and relative size and the market-to-book ratio might be correlated positively for a similar reason. Larger firms are more likely to use debt to finance the firm,

but are also more likely to be overvalued (Moeller et al., 2003), increasing the market to-book ratio, Tobin's Q and relative size if acquirers are larger.

The negative and significant correlation between relative size and prior experience might indicate that the target size effect is present. Firms that have initiated takeovers before might know that acquiring smaller firms is a superior strategy. Firms with little experience will thus acquire relatively bigger firms, increasing the relative size of the acquirer in the deal. Lastly, a significantly negative correlation is found between deal relatedness and price-earnings ratio. This might be due to firms in the same industry being better able to accurately estimate the true value of a firm. Acquirers of related deals will then be more correctly viewed as overvalued, and targets will act accordingly if the overvalued acquirer makes an offer using their overvalued equity (Moeller et al., 2003).

Table 1: Correlation matrix of the short-term model:

The variables in this table are measured as described in the previous sections. The (ln) indicates whether the absolute values of the variable are adjusted with a natural logarithm to account for large skewedness or kurtosis. The Cumulative Abnormal Returns are unadjusted.

Variables	CAR(3D)	(ln)Target Size	Multiple Dir~s	Prior Aq.Exp.	(ln)Leverage	Price-Earnings	(ln)Tobin's Q	Market-Book	Relative Size	Related Deal
CAR(3D)	1.000									
(ln)Target Size	0.155***	1.000								
Multiple Dir~s	-0.010	0.044	1.000							
Prior Aq. Exp.	-0.003	-0.051*	0.018	1.000						
(ln)Leverage	-0.008	0.022	-0.025	0.037	1.000					
Price-Earnings	0.017	0.106***	-0.013	-0.022	-0.023	1.000				
(ln)Tobin's Q	-0.051	-0.020	0.030	0.010	-0.142***	0.110***	1.000			
Market-Book	-0.040	-0.041	-0.005	-0.039	0.089***	0.284***	0.263***	1.000		
Relative Size	0.038	-0.155***	-0.026	-0.056**	-0.117***	0.065**	0.016	0.092***	1.000	
Related Deal	-0.091***	-0.048	-0.005	0.054	0.038	-0.123**	-0.035	-0.027	0.003	1.000

* shows significance at the .050 level; ** shows significance at the .025 level; *** shows significance at the .010 level

Looking at correlations for the long-term model in table 2, only a few outcomes need to be considered. As expected, correlations for the unchanged variables do not change correlations. Only the CAR-variable is switched out for a long term one, and thus only this needs to be examined. First, a highly significant positive correlation is found between target size and CARs, which was found in the short-term model as well. Furthermore, a highly significant negative correlation is found between both Tobin's Q ratio and price-earnings ratio, and CARs. This would imply that being more overvalued would decrease returns. This is consistent with the view of Moeller et al. (2003) that smaller firms are better able to spot overvalued targets, causing them to pay more for the takeover and thus reducing their returns. In the short-term model, the correlation between price-earnings ratio and CARs were not significant and positive. This implies that the long-term model might change the effect of the variables significantly. Lastly, the long-term model finds a negative and significant correlation between the

market-to-book ratio and CARs, indicating that firms that are overvalued have lesser returns on their takeovers, in line with findings of Moeller et al. (2003).

Table 2: Correlation matrix of the long-term model:

The variables in this table are measured as described in the previous sections. The (ln) indicates whether the absolute values of the variable are adjusted with a natural logarithm to account for large skewedness or kurtosis. The Cumulative Abnormal Returns are unadjusted.

Variables	CAR(1Y)	(ln)Target Size	Multiple Dir~s	Prior Aq.Exp.	(ln)Leverage	Price-Earnings	(ln)Tobin's Q	Market-Book	Relative Size	Related Deal
CAR(1Y)	1.000									
(ln)Target Size	0.124***	1.000								
Multiple Dir~s	-0.017	0.044	1.000							
Prior Aq. Exp.	-0.016	-0.051*	0.018	1.000						
(ln)Leverage	-0.009	0.022	-0.025	0.037	1.000					
Price-Earnings	-0.099***	0.106***	-0.013	-0.022	-0.023	1.000				
(ln)Tobin's Q	-0.093***	-0.020	0.030	0.010	-0.142***	0.110***	1.000			
Market-Book	-0.158***	-0.041	-0.005	-0.039	0.089***	0.284***	0.263***	1.000		
Relative Size	0.045	0.155***	-0.026	-0.056*	-0.117***	0.065**	0.016	0.092***	1.000	
Related Deal	-0.022	-0.048	-0.005	0.054*	0.038	-0.123***	-0.035	-0.027	0.003	1.000

* shows significance at the .050 level; ** shows significance at the .025 level; *** shows significance at the .010 level

Lastly, variance inflation factors (VIFs) and tolerance levels are calculated to check the model for multicollinearity. In the presence of multicollinearity, high correlations between predictor variables can possibly lead to unreliable regression outcomes. Research has pointed to the fact that relatively high levels of multicollinearity can be overlooked in the case of the concerned variable being a control or indicator variable, or a power or product of it being included (Allison, 2012). VIF and tolerance levels can be found in table 3. As proposed by Belsley et al. (1980), not high correlations, but rather high levels of multicollinearity can cause validity concerns to arise. As can be seen in table 3, VIF values are around one for all included variables. Allison (2012) states concern with VIF values approaching a value of three, and Belsley et al. (1980) only considers multicollinearity an issue when VIF values go past a value of ten. In this model, multicollinearity does not pose a threat. Tolerance levels are also included to show that no VIF values go below a 10% tolerance level, indicating that multicollinearity is not likely to be a problem in this model. When the same tests are executed for the long-term model, similar results are found. These results can be found in Appendix 1.

The results of the VIF statistics indicate that multicollinearity is not an issue in this study. Allison (2012) implies that multicollinearity is a much bigger issue in this OLS regressions than is correlation. Moreover, correlations were found to be low but significant, which is why their origins are explained in the previous paragraphs, but no actions were taken in order to control for this. For the market-to-book ratio, leverage, Tobin's Q and price-earnings ratio, correlations were more often significant than not. However, multicollinearity is not present in this sample, and thus no further issues are expected.

Table 3: VIF statistics of multicollinearity of the short-term model:

The VIF statistics indicate whether multicollinearity is present in the model. The VIF value is expected to be no higher than three or ten (Belsley et al., 1980). Three is used as a safe measure to state that multicollinearity is not present, but actual issues with multicollinearity arise only above a level of ten. The 1/VIF statistic indicates whether tolerance levels are too low. If a 10% tolerance level is breached (1/VIF < 0.100), multicollinearity might be an issue.

Variable	VIF	1/VIF
Target Size	1.380	0.723
Multiple Dir~s	1.380	0.725
[Multiple Dir~s* Target size]	1.300	0.768
Leverage	1.250	0.799
Tobin's Q	1.180	0.846
Relative Size	1.160	0.864
Related Deal	1.150	0.869
Price-Earnings	1.100	0.906
Market-to-book	1.070	0.937
Acquirer Size	1.020	0.979
Prior Experience	1.010	0.989
Mean Value	1.180	

Results

In this section of the thesis, the results will be discussed. First, a descriptive overview of the available data is given. With a link to prior research, any anomalies in the data will be explained, and any limitations will be discussed. Second, the hypotheses embedded in the literature will be tested using and OLS regression model discussed in chapter 3.4. Finally, some more tests will be executed to check the robustness of the results given below.

Descriptive results

The raw data extracted from both the Eikon and CSMAR database contained some anomalies within the data. The data showed for instance a leverage (debt to assets) of 4000%, negative Price-Earnings ratios, and negative sales data. Neither of these findings made any sense economically and did not occur together in several individual observations. This led to the assumption that not the firms itself should be excluded, but these values needed to be dealt with in a different way. To account for some anomalies in the data, the control variables are winsorized at a 1% level. Following prior research, winsorizing at the 1% level should be enough to allow the data to be corrected for outliers (Vijh & Yang, 2012). As shown in Table 4, this is certainly the case. Each variable was winsorized at either the 1st or the 99th percentile, or both, depending on what would make sense economically, and how the data was erred. For instance, the negative sales were only winsorized at the first percentile, whereas market-to-book ratio needed to be winsorized at both percentiles, due to both extraordinarily high and negative values.

Main variables

The descriptive data shown in table 4 is the dataset after winsorizing. As can be seen straight away, the data makes much more sense economically. Some of the variables will be described in more detail. First of all, the dependent variables are shown, containing both the CARs at the three day and one-year

window that are used in the regression analysis, and the CARs at the seven day and two-year window that are used later in robustness checks. The means of both the three-day, seven day and one-year window are very close to each other, indicating that there is a correlation between short and long term buy-and-hold performance, similar to what Ferris et al. (2018) found in their analysis. This indication is tested in Appendix 2, showing that these values are all correlated positively at the 1% significance level. Furthermore, as expected the correlation between three day and seven-day window, and the one year and two-year window, are considered high, whereas the other correlations are classified as low (Ferris et al., 2018). The mean values of the different CAR windows are relatively close to zero, compared to their minimum and maximum values, and for the first three windows their standard deviation is not that great. This would indicate that their minimum and maximum values are outliers. However, these outliers are important to keep in the study, as they might signal an extreme form of the target size effect that is being studied. Nonetheless, the last of the four CAR windows stands out a little bit. Its mean has suddenly become negative, and its standard deviation bigger, whereas both the minimum and maximum valued have decreased. This leads to believe that in the second year after announcement, all mergers perform worse, and that long-term operating performance becomes negative. This prediction will be tested in the robustness checks.

For the independent variables, the descriptive data also shows some noteworthy elements. The measure of target size is the natural logarithm of the deal value, since this compensates for the large differences in target sizes. Vijh & Yang (2012) find similar differences between target sizes of large and small targets. It is noteworthy that the average target size of around seventeen is higher than the average size of the acquirer, which is around fourteen but the acquirer is not smaller than the target very often, since the relative size is quite high on average. The interpretation of these target sizes is difficult, as the natural logarithm makes it nearly impossible to interpret the absolute values of the descriptive data. Further analysis of the size of the target is done at the end of the chapter. Second, the board connections are focused on. From the descriptive data, it becomes clear that directors sit on 1.8 boards on average, with a 0.8 standard deviation, indicating that having multiple directorships is a common practice. There are even cases of directors holding over thirty concurrent directorates in the data. Board sizes differ between companies in this sample as well, with total board sizes ranging between ten and thirty-nine. On average, a board consists of around nineteen directors, in line with predictions of Di Pietra et al. (2008), who find about eleven board members on average in Italy.

Control variables

Furthermore, control variables are also focused on in more detail. Acquirers are found to have initiated around two mergers or acquisitions on average before the acquisition in question. The most experienced company has executed ten mergers before announcing the one that is examined closer, which is not surprising if companies choose to acquire multiple smaller targets instead of one bigger one (Maney et al., 2011). Furthermore, the leverage ratio of acquiring firms is measured with a natural logarithm as

well, as the differences between firms were very large. A high leverage ratio might become an issue if these companies need to attract further debt to complete the takeover (DePamphilis, 2015). Further interpretation of this measure is intuitively hard. The Price-Earnings ratio of the sample is ninety-two on average, which is fairly high. It suggests that investors are willing to pay eighty-seven Yuan for one Yuan in earnings, the average of which lies somewhere around twenty-five in prior research (Vijh & Yang, 2012). This implies that the acquirers in this sample are quite overvalued, and possible might have trouble offering their stock as payment for a deal (Moeller et al., 2003). Next, the average Tobin's Q ratio of acquiring firms is also measured with a natural logarithm to account for big differences. A high Tobin's Q suggests that the replacement costs of the assets of a firm is much lower than the market value of replacing these assets. This implies that the average acquiring firm in the sample is overvalued (Dong et al., 2006). The lowest natural logarithm values of the Q-ratio turn negative, but the absolute values do not. This is a good sign, signalling that the companies are relatively healthy. A negative absolute Q-ratio would signal that a firm might be on the verge of a bankruptcy (Fuhrmann et al., 2017).

The Market-to-book ratio of acquiring firms is another control in this study. It shows an average value of around four, indicating that the market value of assets is around four times as high as the book value of assets. This confirms that the stocks of acquirers indeed are overvalued (DePamphilis, 2015). The size of the acquirer is measured by the natural logarithm of annual sales. This is done, to account for the big difference in the sizes of different acquirers. As can be seen in the descriptive data, even the natural logarithm of sales spans between around nine and around twenty-one. This indicates that even though some acquirers are relatively small, some are quite big too. The mean of fourteen and standard deviation of merely one and a half corroborate these statements. Little can be said about the absolute size of the acquirers when using this measure, but it is necessary to measure it in this way to avoid trouble in the regression analysis. Next, it can be seen that only nineteen percent of deals are considered related deals. This indicates that most mergers and acquisitions are conducted outside of the acquirers market and industry. This is lower than expected, following research of Ferris et al. (2018) who find that mergers and acquisitions are most common within industries. It can be seen that in nearly all mergers and acquisitions all shares of the target are bought. This makes sense, as in the sample selection, all repurchasing activities that are not full acquisitions or full mergers were excluded. On average ninety-eight percent of shares were bought, indicating that the average acquirer already had a stake in the target's shares. This could be an indication that these firms were in each others network prior to the takeover. On one occasion only fifty percent of shares were bought. This concerns a very small company in which the governement ended up with a large portion of shares as well.

Table 4: Descriptive analysis of the variables:

The variables in this table are measured as described in the previous sections. The (ln) indicates whether the absolute values of the variable are adjusted with a natural logarithm to account for large skewedness or kurtosis. The Cumulative Abnormal Returns are unadjusted. The measure of relative size is based on absolute sizes of the acquirer and target, and not the logarithmically adjusted sizes.

Variables	Obs	Mean	Std.Dev.	Min	Max
CAR (3-day window)	1596	3.811	8.861	-31.037	41.19
CAR (7-day window)	1596	5.515	14.189	-47.492	51.161
CAR (1-year window)	1596	5.105	89.93	-677.408	1932.69
CAR (2-year window)	1596	-8.105	124.713	-1313.144	1890.07
(ln) Target Size	1596	17.545	1.947	11.768	23.396
Multiple Directorates	1596	1.787	.793	1.025	9.455
Board Size	1596	19.158	5.196	10	39
Prior Acquisitions	1596	2.262	1.521	1	10
(ln) Leverage	1464	3.114	1.607	-2.04	6.183
Price-Earnings	1322	87.417	129.038	1.1	789
(ln) Tobin's Q	1596	1.051	2.241	-7.216	6.59
Market-to-book	1587	4.263	3.79	.26	26.41
(ln) Acquirer Size	1595	14.212	1.444	9.86	20.767
Deal Relatedness	1596	.192	.394	0	1
Relative Size	1595	400.041	3548.365	.008	104000
Acquired Shares	1596	98.175	7.813	50	100

Testing Hypotheses

To properly test the hypotheses that were set up in the previous chapter, two separate regressions need to be ran. First of all, the short-term model needs to be tested. This model, however, is thought to only indicate the market reaction to the announcement of a takeover, and not truly measure M&A performance (Zollo & Meier, 2008). To be able to find results on true M&A performance, a long-term model needs to be ran as well. Only after both results are considered, the hypotheses can be answered properly.

Testing the Short-Term Model

The results of the regression analysis of the short-term model can be found in table 5. It immediately becomes clear that the model has fairly low explanatory power, with an adjusted r-squared of only 6.7 percent. This, however, is very common in M&A performance research, with most researchers finding

an r-squared of their models of only around two percent (Moeller et al., 2003; Vijh & Yang, 2012; Humphery-Jenner & Powell, 2014). There are some studies that do find adjusted r-squared values of around ten percent, but these are longer term-based studies (e.g. Alexandridis et al., 2017).

Main variables

The short-term regression model shows a highly significant and positive relation between M&A performance and target size, which is the opposite of what was expected from the literature. The target size effect predicts a negative relation between target size and M&A performance (Vijh & Yang, 2012). The positive relation that is found might be partially attributable to the fact that being well connected to the government, which is common firms in China (Song et al., 2011), might reduce M&A performance. Furthermore, smaller firms might be more inclined to use corruption and bribery to achieve its goals (Meon & Sekkat, 2005), since their limited capacity, credibility and creditworthiness make it nearly impossible to do so in another way. For these reasons, taking over a smaller firm might reduce an acquirer's capacity to realize expected synergies. Nonetheless, the short-term model considers an event window of only three days, limiting the public's ability to properly assess the impact and profitability of the takeover. Zollo and Meier (2008) already describe that this event window cannot explain true M&A performance, but only the market reaction of the widely uninformed public to the announcement of the merger. To see whether these results are indicative for M&A performance in general, the long-term model must also be considered, and these findings must be checked for robustness under different event windows.

Even though the target size is found to have a significant effect on M&A performance, relative size too is important to take into account. Relative size is found to have a positive and significant relation at the 10% level to M&A performance, indicating that if the gap between acquirer and target becomes bigger, M&A performance improves. This is in line with the target size effect as described in the literature. Moreover, when acquirer size is focused on, supporting results are found. Its negative significant effect at the 1% level on M&A performance indicates that if the acquirer gets bigger, M&A performance drops. Even though this might seem contradictory, these two findings are in line with the target size effect. If relative size increases, but acquirer size stays constant, the decrease in target size alone would be responsible for the increase in M&A performance. If acquirer size were to rise, and target size were to remain constant, a negative relation would be found.

For the second independent variable, a negative and insignificant relation to M&A performance is found. This implies that adding an average directorship to one of the directors on the board of the acquirer does not impact the performance of a takeover. The negative sign does indicate that having more directorships might impede a director's ability to conduct proper monitoring of the firms the director holds a directorship on (Liu & Paul, 2015; Ferris et al., 2018), but does so insignificantly. However, some caution is necessary with the interpretation of this relationship. The measure for multiple directorships considers the average amount of directorships per director on a board of acquirer directors at the time

of announcement of a takeover. So not the individual director characteristics, but rather an average of directorships within the board is measured. This is useful in further M&A research, since the information that is available to the board of acquirer directors is what is important, and not the individual that initiates the interlock (Shropshire, 2010). This is in line with prior research, which also was unable to find consistent or definitive results of the effect of multiple directorships on firm or M&A performance. Rosenstein and Wyatt (1990) find that stock prices increase with the announcement of the addition of an additional outside director to the company's board. These findings are supportive of the reputational view of director busyness. In addition, other studies have identified that the busyness of boards is positively associated with firm performance (e.g. Harris & Shimizu, 2004; Di Pietra, Grambovas, Raonic, & Riccaboni, 2008). However, directors may become ineffective if the directors become too busy, reducing firm and M&A performance (Core, Holthausen & Larcker, 1999; Ferris et al., 2003). Fich and Shivdasani (2006) find that additional directorships of outside directors decrease firm performance, as the directors are becoming less efficient monitors and might get distracted. However, they fail to take into account the benefits of multiple directorates to any extent. Other research also finds a predominantly negative effect of director busyness on firm value and performance (e.g. Liu & Paul, 2015), or finds no relation at all (Ferris et al., 2003).

The interaction-effect between multiple directorships and target size that is included in the model to answer the second hypothesis is found to have a slightly positive but insignificant effect on M&A performance. These results indicate that the slopes of the target size effect and the effect of multiple directorships is not influenced by the interaction between the two. This might indicate that the second hypothesis might have to be rejected altogether, however, this finding is not significant in the short-term model, but might become significant in the long-term model. Only after both models are examined in more detail can further conclusions be drawn.

To see whether these results hold if the interaction effect is excluded from the analysis, another regression is ran. The results of this regression can be found in Appendix 3. As can be seen in the outcomes of the regression analysis, not much has changed. All significances of variables remain the same, and the effects of variables do not change direction because of this exclusion. Even though the adjusted r-squared drops a little, the exclusion is found to have little effect on the generalizability of these results.

Control variables

Focussing on the control variables, a positive relation between leverage and M&A performance is found that is significant at the 10% level. This would imply that having more equity compared to debt increases M&A performance. Having more equity relative to debt, decreases the possibility that a firm would become distressed and thus decreases the premium an acquirer has to pay, increasing M&A performance. A negative and insignificant relationship is found between the acquirer's price-earnings ratio and M&A performance. Furthermore, a negative and insignificant relation is found between an

acquirer's Tobin's Q ratio and M&A performance. The market-to-book ratio is found to have a negative and highly significant relation to M&A performance at the 1% level. This implies that having a higher market value of assets compared to a book value of assets, decreases M&A performance. Moeller et al. (2003) indicate that this is due to smaller firms being more able to spot overvalued acquirer equity, and thus being able to bargain a better deal if this is the case. A high market-to-book ratio is believed to signal overvalued equity. Prior acquisition experience is found to have an insignificant positive relation to M&A performance. Lastly, if a deal is found to be related, meaning that the target and the acquirer are from the same industry, it impacts M&A performance negatively. This is significant at the 1% level, and indicates that M&A performance drops with around 185 basis points if the deal is found to be related. This is in line with expectations from theory, as a target in the same industry is more likely to have valuable information about the acquirer that can increase the price paid for the takeover and thus reduce performance (Cai & Sevilir, 2012; Ferris et al., 2018).

Table 5: Short term model regression.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CAR (3D)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size	0.664	0.133	4.98	0.000	0.402	0.925	***
Multiple Dir~s	-0.001	0.294	-0.01	0.996	-0.578	0.576	
[Multiple Dir~s* Target size]	0.001	0.000	1.34	0.182	0.000	0.002	
Leverage	0.288	0.169	1.70	0.089	-0.044	0.619	*
Tobin's Q	-0.133	0.114	-1.17	0.241	-0.357	0.090	
Relative Size	0.000	0.000	1.87	0.061	0.000	0.001	*
Related Deal	-1.853	0.620	-2.99	0.003	-3.069	-0.637	***
Price-Earnings	-0.002	0.002	-0.89	0.376	-0.006	0.002	
Market-to-book	-0.259	0.088	-2.95	0.003	-0.431	-0.087	***
Acquirer Size	-1.223	0.213	-5.75	0.000	-1.641	-0.806	***
Prior Experience	0.145	0.160	0.90	0.368	-0.170	0.459	
Constant	9.869	3.540	2.79	0.005	2.924	16.814	***
Mean dependent var		3.454	SD dependent var			8.778	
R-squared		0.067	Number of obs			1213.000	
F-test		7.845	Prob > F			0.000	
Akaike crit. (AIC)		8650.998	Bayesian crit. (BIC)			8712.208	

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Testing the Long-Term Model

For the long-term model, a similar regression is ran. The only difference, as explained in the previous chapter, is the dependent variable. The buy-and-hold return on acquirer stock for a period of one year,

instead of a mere three days is used as a supplement to short term results to explain M&A performance (Zollo & Meier, 2008). This model has an adjusted r-squared of thirteen percent. This is in line with research that focusses on long term M&A performance, especially if longer term buy-and-hold returns are focussed on (Alexandridis et al., 2017).

Main variables

Looking at the results from this regression, which are portrayed in table 6, a few things stand out. First, the relation between target size and M&A performance is found to be positive and significant at the 1% level. This is remarkable, since the target size effect predicts an opposite relationship. Consistent with the short-term results that are discussed earlier, this would indicate that not the target size effect might not be present in China, but rather its effect might be reversed. The reason for this might be that several cultural, social and institutional differences might influence the performance of the merger. One example of this is the relative importance of reputation in Chinese markets (Hines, 2007). Managers with better reputation can signal good performance to the Chinese markets more easily, as the markets do not have a lot of other information to use for their financial decisions (Fletcher & Harris, 2012). Smaller firms that signal this good reputation can thus increase their return in the markets and become less undervalued and more efficient. This will reduce the firms targetiveness and reduce the potential synergies that may be realized if this firm were to be taken over.

Relative size has a positive effect on M&A performance, and acquirer size a negative effect. Both are found to be significant, and in line with the short-term model. This might be an indication that the target size effect might still be present, as not the absolute size of the target matters, but the relative size. Furthermore, the negative effect of acquirer size on M&A performance indicates that smaller acquirers perform better in the takeover markets. This result is similar to what Moeller et al. (2003) find in their study.

Second, the effect of multiple directorships on M&A performance is positive and significant. This implies that adding a directorship on average to the directors of an acquirer board does not increase M&A performance. These results contradict the earlier results of the short-term model, in which multiple directorships had an insignificant and negative relationship to M&A performance. This would be a good example of why both a short and a long-term model need to be used in M&A research, as they are both found to measure different elements (Zollo & Meier, 2008). The different setting might explain these contradictions to some extent.

Ahn, Jiraporn, and Kim (2010) find that mergers of a busy board lead to a more negative abnormal return to acquiring shareholders at the time of announcement. They, however, only consider U.S. firms in their sample, generating limited generalizability to other samples (Ferris et al., 2018). However, since nearly all of the studies on multiple directorships are executed in the United States, there are some issues with its generalizability of the target size effect. For a pure Chinese sample study, like this one, the limits

of generalizability of the results from the U.S. have to be accounted for. Ferris et al. (2003), for example, expresses concerns about the generalizability of the results of Brown and Maloney (1999) and Cotter et al. (1997). Brown and Maloney (1999) do find superior positive returns for acquirers in M&A deals that enjoy benefits of multiple directors, but their unique settings and circumstances make it hard to generalize this to, for instance, a Chinese setting (Ferris et al., 2003).

The interaction effect between target size and multiple directorships is found to have a positive and significant relation to M&A performance at the 5% level. This would imply that the interaction between target size and multiple directorships influences the relation these two variables have on M&A performance. Even though the interaction effect was found to be insignificant in the short run model, its significance in the long-term model signals that this effect is important to take into account. This is especially true, since the effect of multiple directorships itself also is significant in only the long-term model. To determine the economic impact of the interaction effect, a similar regression is executed without the interaction effect present. This makes it easier to interpret the results of the main effects, which are found to not change much, as can be seen in Appendix 4.

Control variables

For the control variables, more significant relationships are found, which will be discussed next. First, the level of leverage of acquiring firms has a positive but insignificant effect on long term M&A performance. Second, the price-earnings ratio has a negative and significant effect on M&A performance. It becomes clear, that even though a similar effect is found in the short-term model, but it only becomes significant if a longer time horizon is considered. A higher price-earnings ratio indicates that an investor is willing to pay more now for a stock for one Yuan of earnings in the future. In the descriptive analysis, it became clear that the mean value of the price-earnings ratio is relatively high in this sample, compared to average values in prior research. This might indicate that an increase in the price-earnings ratio might bring about a negative reaction to M&A performance in the long run.

The Tobin's Q ratio is found to have a negative and significant effect on M&A performance, in line with the findings of the short-term model. The significant effect indicates that being overvalued reduces M&A performance, as Moeller et al. (2003) predicted. The market-to-book value is found to have a negative relation to M&A performance, which indicates that an overvalued acquirer is likely to realize less profitable synergies in the long run. This might be due to an increase in the premium paid to acquire the target (DePamphilis, 2015) or due to punishment by the markets for having overvalued stock (Moeller et al., 2003). This is again consistent with the findings in the short-term model. It is notable that prior acquisition experience is found to have almost no effect at all on long term M&A performance. Prior literature stated that being an experienced acquirer would increase future M&A performance, since synergies are realized more easily (Zollo & Meier, 2008). These results indicate that this is not the case in this sample. Lastly, deal relatedness has a negative, significant relation with M&A performance at the 5% level. This is in line with the results of the short-term model, indicating that acquiring a target in

the same industry might reduce M&A performance. This might be the case as long term operational synergies might be higher in diversifying mergers (Ferris et al., 2018), since the expertise of the target can be used when entering different industries. Within the same industry, a merger or acquisition can only realize synergies with innovative technologies or ineffective use of a target's assets (Maney et al., 2011).

Table 6: Long term model regression.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CAR (1Y)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size	3.644	0.989	3.68	0.000	1.703	5.585	***
Multiple Dir~s	2.532	1.182	1.62	0.096	0.749	6.813	*
[Multiple Dir~s* Target size]	0.008	0.004	2.30	0.021	0.001	0.015	**
Leverage	1.787	1.255	1.42	0.155	-0.675	4.249	
Tobin's Q	-1.718	0.845	-2.03	0.042	-3.375	-0.061	**
Relative Size	0.004	0.002	2.26	0.024	0.001	0.008	**
Related Deal	-9.076	4.600	-1.97	0.049	-18.100	-0.051	**
Price-Earnings	-0.043	0.015	-2.84	0.005	-0.073	-0.013	***
Market-to-book	-6.318	0.651	-9.70	0.000	-7.596	-5.040	***
Acquirer Size	-8.136	1.578	-5.16	0.000	-11.232	-5.039	***
Prior Experience	-0.239	1.190	-0.20	0.841	-2.574	2.096	
Constant	74.693	26.269	2.84	0.005	23.154	126.232	***

Mean dependent var	-1.007	SD dependent var	67.450
R-squared	0.130	Number of obs	1213.000
F-test	16.297	Prob > F	0.000
Akaike crit. (AIC)	13513.422	Bayesian crit. (BIC)	13574.632

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

With the results of both the short-term model and the long-term model laid out, the hypotheses that were developed in the second chapter can be discussed. Some caution is needed when answering the hypotheses, as the short- and long-term model have some conflicting results. One of the most important examples of this is the difference of the effect of multiple directorships on M&A performance between the short- and long-term model. In the short-term model, a negative and insignificant relation is found, whereas the long-term model predicts a positive and insignificant relation. Even though both effects are insignificant, it might signal a possible reason for the inconsistencies in prior literature. This might be due to the short-term model not truly measuring M&A performance, but rather the market reactions (Zollo & Meier, 2008). Multiple directorships might affect M&A performance positively in the long run, but the market might perceive a board with more directorships as unable to have the time to monitor the firm, let alone properly realizing the potential synergies (Liu & Paul, 2015; Ferris et al., 2018).

The first hypothesis stated: *H_1: The size of the target is negatively associated with short- and long-term acquirer intra-China M&A performance.* To answer this hypothesis, the effect of target size on M&A performance is used. In the short-term model, this effect was positive and significant, similar to the long-term model. This implies that the target size effect, as theorized, is not present in this sample, since a negative relation between target size and M&A performance was hypothesized. The cultural differences between the U.S. and China might explain these seemingly conflicting results for several reasons. First, the relative importance of a director's or a firm's reputation can indeed cause for smaller firms to have

more trouble signaling their good reputation to the market, as they do not have much history to show for it. On the other hand, it might give smaller firms the opportunity to signal good reputation more easily. If a smaller firm, for instance, has directors that also are directors on a board of a reputable big company, the market might react to this firm more favorably (Zhang & He, 2014). Moreover, managers in China are incentivized to maintain good relations and not to lose reputation on either a personal or a professional level (Hines, 2007). This can amplify the reason stated above, that might explain the contradictions in the target size effect. A manager that tries to maintain relations and reputation is rewarded by the market. Furthermore, if the acquirer is partially owned by the government, the takeover might be perceived as value-destroying or perverse, as government owned companies are found to acquire other companies less efficiently and for the wrong motives (Zhou et al., 2015). Only if the merger is value-creating in the long run, will the market slightly adapt its view (Fan et al., 2007).

However, when looking at the control variables for relative size and acquirer size, which are found to impact M&A performance positively and negatively respectively in both models, it becomes clear that the target size effect might be present after all. Since the relative size matters, relatively smaller targets or relatively bigger acquirers will have a positive influence on M&A performance. Moreover, since acquirer size is negatively related to M&A performance, a bigger acquirer would reduce the CARs. This implies that the effect of relative size on M&A performance is due to the diminishing of target size, in line with the target size effect. Prior research has indicated that using relative size instead of actual size of the target is better fit for M&A research (Moeller et al., 2003; Vijh & Yang, 2012). Following these reasons, the first hypothesis might be accepted.

In short, it is uncertain which of these effects is dominant. Following the absolute size of the target, the first hypothesis needs to be rejected, whereas with the relative size, the first hypothesis needs to be accepted. In robustness checks, this study will look at different measures of target size and if these result in acceptance of the hypothesis or not. For now, this hypothesis will be rejected, as no consistent results are found.

The second hypothesis was unclear which direction would have the upper hand, and therefore split up in two similar hypotheses: *H_{2a}: Acquirer multiple directorships have a negative effect on the target size effect of acquirer inter-China M&A performance.* And *H_{2b}: Acquirer multiple directorships have a positive effect on the target size effect of acquirer inter-China M&A performance*.

The hypothesis was unclear about the effect it was thought to have, since prior research could not decide on whether the effect of multiple directorships on the target size effect of M&A performance in China was positive or negative (Liu & Paul, 2015; Ferris et al., 2018). When looking at tables 5 and 6, similar conflicting results are found. In the short-term model, multiple directorships are found to have a negative, but insignificant, effect on M&A performance, whereas in the long-term model it is found to have a positive and significant effect. The interaction term between target size and multiple

directorships, which is the most important variable to consider for answering the second hypothesis, is positive in both models and significant in the long-term model. This implies that it is something that does impact M&A performance, in the sense that it changes the slopes of the main variables' effect on M&A performance. If an acquirer adds another directorship on average to their board, the M&A performance of this acquirer will rise. This is consistent with the reputational view of multiple directorships. The impact of multiple directorships on the target size effect is therefore considered to be positive and significant, resulting in the acceptance of hypothesis 2b and rejection of hypothesis 2a. The economic impact of this effect, however, is found to be minimal. The exclusion of the interaction effect between target size and multiple directorships does not increase the explanatory power of the model or causes any major changes to the remaining effects in the model to occur. This can be found in appendix 3 and 4.

However, the literature stated that the target size effect might be reduced, or its direction flipped if it was implemented in a Chinese setting. The theories behind multiple directorships, even when applied to China, did corroborate these statements. The finding that the first hypothesis did not hold is therefore not surprising, but that the effect of multiple directorships is positive and significant is. This would mean that not only results having larger targets in higher M&A performance, this effect is reinforced with the presence of multiple directorships.

Robustness Checks

Research has expressed concerns with the use of a single measure of performance. Following insights from Thanos and Papadakis (2012), multiple measures of performance are used in this study as robustness checks. In the case of measuring short term performance, a seven-day event window [-3, +3] is useful to check if the findings are robust. Results might differ for a variety of reasons, including external shocks or markets having weak exchange rules. In these cases, up to a forty-one-day event window can possibly be used (Humphery-Jenner & Powell, 2014; Alexandridis et al., 2013). The Chinese markets are developed well enough for a seven-day window to suffice. For long term-performance, the one-year long-term event study currently captures the buy-and-hold returns. A window considering two years of performance will be helpful to explain if the performance measure is robust. A window starting one day after announcement and lasting either 504 trading days after that will capture these events [+1, +505] (Humphery-Jenner & Powell, 2014; Rao-Nicholson et al., 2016).

The results in table 7 show the outcomes of the first robustness check, which considers a seven-day alternative to the three-day short-term performance measure. In both models the adjusted r-squared is below ten percent. This indicates that around seven percent of the CAR data is explained with the use of this model. This is considerably more than prior research has found (Humphery-Jenner & Powell, 2014). However, the explanatory power has improved only slightly with the switch to a seven-day event window. When focusing on the variables in more detail, not much of a difference is found. All variables

show effects in the same direction, and all coefficients are slightly higher in the seven-day model. Only the measure for leverage is no longer found to influence M&A performance significantly.

Table 7: Short term model robustness check.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CAR (7D)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size	1.349	0.211	6.40	0.000	0.935	1.762	***
Multiple Dir~s	-0.627	0.465	-1.35	0.177	-1.539	0.284	
[Multiple Dir~s * Target size]	0.001	0.001	1.57	0.116	0.000	0.003	
Leverage	0.382	0.267	1.43	0.153	-0.142	0.906	
Tobin's Q	-0.126	0.180	-0.70	0.483	-0.479	0.227	
Relative Size	0.001	0.000	2.29	0.022	0.000	0.002	**
Related Deal	-2.404	0.980	-2.45	0.014	-4.326	-0.482	**
Price-Earnings	-0.003	0.003	-0.77	0.441	-0.009	0.004	
Market-to-book	-0.549	0.139	-3.96	0.000	-0.821	-0.277	***
Acquirer Size	-1.722	0.336	-5.12	0.000	-2.382	-1.063	***
Prior Experience	0.257	0.253	1.01	0.310	-0.240	0.755	
Constant	8.271	5.594	1.48	0.140	-2.704	19.246	

Mean dependent var	4.811	SD dependent var	13.979
R-squared	0.081	Number of obs	1213.000
F-test	9.668	Prob > F	0.000
Akaike crit. (AIC)	9761.145	Bayesian crit. (BIC)	9822.355

**** p<0.01, ** p<0.05, * p<0.1*

The long-term model has also been tested with a different event window. This time, the buy-and-hold returns of two years of data is used to explain M&A performance. The results of robustness check for the long-term model can be found in table 8. It can be seen that the adjusted r-squared of the model has improved slightly, from thirteen percent to around fourteen percent. This indicates that the model is better able to explain M&A performance. Compared to prior research, which found an adjusted r-squared of around ten percent (Alexandridis et al., 2017), this is considered high.

For this model, several noteworthy differences are found. First, the measure for target size is no longer significant when using the two-year model, but it is still positive. A similar change can be noted in the variable for multiple directorships and the interaction effect. None of the effects this study is interested in has a significant effect in the two-year model. None of the effects in the model change direction, and the significances of the control variables stay more or less the same. Using the two-year regression model, the stated hypotheses would not be accepted.

Table 8: Long term model robustness check.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CAR (2Y)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size	2.131	1.651	1.29	0.197	-1.108	5.370	
Multiple Dir~s	2.284	3.641	0.63	0.531	-4.859	9.427	
[Multiple Dir~s* Target size]	0.006	0.006	0.96	0.336	-0.006	0.017	
Leverage	3.903	2.094	1.86	0.063	-0.204	8.011	*
Tobin's Q	-2.125	1.409	-1.51	0.132	-4.890	0.640	
Relative Size	0.008	0.003	2.56	0.011	0.002	0.015	**
Related Deal	-15.476	7.675	-2.02	0.044	-30.533	-0.419	**
Price-Earnings	-0.118	0.025	-4.64	0.000	-0.168	-0.068	***
Market-to-book	-11.445	1.087	-10.53	0.000	-13.577	-9.313	***
Acquirer Size	-13.100	2.633	-4.97	0.000	-18.266	-7.933	***
Prior Experience	-0.576	1.986	-0.29	0.772	-4.472	3.320	
Constant	180.280	43.830	4.11	0.000	94.289	266.272	***
Mean dependent var	-16.227	SD dependent var				113.164	
R-squared	0.139	Number of obs				1213.000	
F-test	17.695	Prob > F				0.000	
Akaike crit. (AIC)	14755.307	Bayesian crit. (BIC)				14816.517	

*** *p<0.01, ** p<0.05, * p<0.1*

Furthermore, the proxy that is used in this study to measure target size is prone to have some error. In the absence of actual target size data, the deal value corrected for the number of shares that are purchased, were used to measure target size. Previous research, such as Vijh & Yang (2012) and Moeller et al. (2003), used a different measure for target size. These researchers categorized the size of the target in ten decimals, with only the decimal with the lowest value being used as a proxy for target size. To check if the proxy in this study generates robust results, a similar strategy to prior research is used.

The value for target size is then categorized into ten identical groups to identify the smaller target from bigger ones. Following Moeller et al. (2003) and Vijh and Yang (2012), only the lowest decimal would indicate small firms. The other nine decimals are then used to indicate larger targets. Using table 9, one is able to see how the ten decimals are distributed. The smallest observation of target size is 129 thousand Yuan, indicating the starting point of the first decimal. The first decimal is used in the regression model as a measure for the target size effect and the other nine decimals together serve as a control group for the smaller sized firms, following Vijh and Yang (2012). The borders of other decimals are quite evenly distributed, with most of the smaller and higher valued targets positioned in the first and last decimal respectively.

Table 9: Categorical analysis of the target size decimals:

The values for target size in this table indicate the lowest value in which the decimal begins. For the first decimal, 129.000 is the first and lowest observation of target size. The lowest value of the tenth decimal is 422 million Yuan.

Target Size	Decimal	Frequency
129.000-	1	159
2.980.000-	2	160
8.122.000-	3	159
16.400.000-	4	160
29.400.000-	5	160
48.600.000-	6	159
78.700.000-	7	160
137.000.000-	8	159
225.000.000-	9	160
422.000.000-	10	160

These decimals are implemented in the regression analysis to check the robustness of the measure of target size. The outcomes of this robustness check can be found in Appendix 5 and 6. For the short-term regression, the effect of being in the smallest decimal of target size on M&A performance is negative and significant at the 1% level. This is precisely the opposite what the target size effect expected to happen, which would indicate that the target size effect might only hold for groups of firms and not for absolute firm size. With the target being in the smallest decimal of firms, the CARs are lower compared to being in any of the other decimals of firms. This is in contrast to the findings of Vijh & Yang (2012), who first stated the notion of the target size effect. For the long-term model, similar, but insignificant results are found for the target size effect. In this long-term model, a positive and significant interaction effect is recorded. This would mean that the second hypothesis could be accepted when using this model.

To check whether having a target in one of the other nine decimals is most profitable, the smallest decimal is used as a control group and all other decimals are regressed to short- and long-term M&A performance. Appendices 7 and 8 show these results. Ironically, all decimals have either positively and significantly coefficients or have insignificant coefficients overall. This would indicate that of all decimals, the smallest decimal performs the worst. In other words, targets that are the smallest, have the worst M&A performance of all targets, which is the opposite of what the target size effect stated. Moreover, the decimals that contain the biggest target firms are found to have the highest CARs of all, implying that having bigger targets makes it more likely to have better M&A performance. As can be seen in Appendix 7 and 8, these outcomes are present for both the short and the long-term model.

In short, the robustness checks do not alter the effects that were found in the regression models much. The first hypothesis has to be rejected, as any measure for target size fails to find the correct direction to explain the target size effect. The measures for relative size and acquirer size do find some support for the target size effect, but this is insufficient to accept the first hypothesis. The second hypothesis finds support in most of the long-term models, but none of the short-term models. The effect of multiple directorships is therefore expected to matter for longer term M&A performance, and not for short term

market reactions to the announcement of a takeover (Zollo & Meier, 2008). For this reason, this study accepts the second hypothesis, and states that the direction of the effect is positive, in line with the reputational view of multiple directorships (Ferris et al., 2003; Liu & Paul, 2015; Ferris et al., 2018)

Conclusions

Conclusions

The aim of this thesis was to explain to what extent multiple directorships influence the target size effect, as portrayed in the United States, in a Chinese setting. Prior research has focused too little on settings like China, in which cultural differences may cause for theories to not be generalizable. Furthermore, the literature on multiple directorships is inconclusive on whether a positive or a negative effect on M&A performance is expected. The Chinese sample implies that not only the current theories on multiple directorships needs to be considered that originated in Europe or the U.S., but also the implications for Chinese firms need to be accounted for. This sample of 1.596 mergers and acquisitions between 2006 and 2018 in China was chosen to assure that a broad array of firms was included in the sample, and the results would be generalizable.

This study finds that the target size effect, as shown by Vijh & Yang (2012), does not hold in the Chinese sample. The short- and long-term regression analysis finds a positive effect of target size, instead of the negative effect that was hypothesized by prior research. These contradicting results cannot be fully explained by the differences in culture or sample, and thus a large portion of the data remains unexplained. In this regard, this study may have caused more questions to arise than it has answered. Multiple directorships are found to have no effect in the short-term model, and a positive effect in the long-term model. These findings are in line with prior research to some extent, as they too find contradicting results. A possible explanation for these findings is that the short-term model measures only the market reaction to the announcement of a takeover, and that it is simply not possible for the market to form an opinion about the board structure and multiple directorships in this time horizon. In the long run, it might become clear that the market reacts positively to multiple directorships in takeovers, and that the multiple directorships can actually increase the potential synergies the firm might realize, and thus increase long term M&A performance. The interaction effect between target size and multiple directorships that was included in this model tried to measure to what extent the target size effect was influenced by multiple directorships, answering the main research question of this paper. In the short-term model, little significant results were found. This might be due to the lack of significant results of the effect of multiple directorships in general. In the long-term model, however, a positive and significant value for the interaction effect was found, implying that multiple directorships do indeed influence the target size effect significantly.

These results are helpful for managers in the field of Chinese business, that try to choose a good takeover target, as they can now see that a larger target, and having more directorships on average will most likely

increase long term M&A performance. Researchers can use the results of this study to examine the cultural differences between Europe, the U.S. and China further. Moreover, a direction to the effect of multiple directorships on M&A performance is given, allowing further research to explore multiple directorships and M&A deeper.

This study has posed a possible reason for the conflicting results in current multiple directorships literature. In the short term, the public might not be able to accurately assess the potential benefits from having multiple directorships in takeovers. Whereas in the long term, the markets are in favor of these multiple directorships. Prior research has focused on the short and long term interchangeably, and may therefore have found inconsistent results. Furthermore, this study finds that the target size effect does not hold in China, indicating that the cultural differences between the U.S. and China are a factor that might cause U.S. based theories to no longer hold in a Chinese setting. This is something future researchers must take into account when using foreign theories to predict or explain M&A performance.

Discussion

Of course, none of the conclusions in this study is without limitations. Some generalizability issues might arise from the low explanatory power of the models in this study. Even though prior research has found similar, or even lower explanatory power in their models (e.g. Moeller et al., 2003; Vijh & Yang, 2012; Humphery-Jenner & Powell, 2014; Alexandridis et al., 2017), an r-squared of around five percent for the short term model and around twelve percent for the long term model is not very high. This might imply that the results of the study cannot be generalized to the entire Chinese setting. However, some new insights on the topic can be helpful to allow further research to understand this setting better. Second, the use of a proxy for target size is perhaps one of the greatest limitations to this study. Even though several robustness checks were executed to check if these results are impacted by different measures of target size, all of these different measures are based on the same underlying value of the target. The current literature is no stranger to using proxies for variables such as size, especially when true values are difficult to obtain, due to closed markets or poor institutional frameworks (Cai & Sevilir, 2012). However, the measure of target size cannot be seen as a solid proxy that would serve as a perfect substitute to actual target size.

For the actual testing of hypotheses, the OLS regression method has been found to properly explain M&A performance, but the use of the three-day and one-year event windows is still disputable. Even though robustness checks have indicated that most results are robust to the use of a seven-day and two-year window, some research expresses concerns with the use of any less than eleven-day and three-year windows to properly explain M&A performance in weaker and less developed markets (Alexandridis et al., 2013; Humphery-Jenner & Powell, 2014; Rao-Nicholson et al., 2016).

Future research might be able to focus on the target size effect in more detail. Since this effect has an opposite effect in both China and the United States, cultural differences might play a big role in the

origin of this effect. The factors that cause this effect to happen are yet unknown to researchers in the field. Even though this study finds that multiple directorships might be a long-term influence to this effect, other factors might also play a role. Furthermore, future research might be able to test the target size effect in China, with the use of a proper measure of target size. Only then can be said whether the proxy used in this study was sufficient or insufficient to explain M&A performance. Lastly, future research might be able to find a dominant view of multiple directorships, or which factors influence the differences in results of previous research. This study believes that the two views might be dominant over different time horizons, but other factors might also be at play.

References

Abrahamson, E. (1991). Managerial fads and fashions: the diffusion and rejection of innovations. Academy of Management Review, 16, 586-612.

Ahn, S., Jiraporn, P., & Kim, Y. S. (2010). Multiple directorships and acquirer returns. Journal of Banking & Finance, 34(9), 2011-2026.

Alexandridis, G., Antypas, N., & Travlos, N. (2017). Value creation from M&As: New evidence. Journal of Corporate Finance, 45, 632-650.

Alexandridis, G., Fuller, K. P., Terhaar, L., & Travlos, N. G. (2013). Deal size, acquisition premia and shareholder gains. Journal of Corporate Finance, 20, 1-13.

Allison, P. (2012). When can you safely ignore multicollinearity. Statistical Horizons, 5(1).

Andres, C., Van Den Bongard, I., & Lehmann, M. (2013). Is busy really busy? Board governance revisited. Journal of Business Finance & Accounting, 40(9-10), 1221-1246.

Bar-Hava, K., Feng, G., & Lev, B. (2013). Busy directors are detrimental to corporate governance. Working paper.

Beck, P. J., & Maher, M. W. (1986). A comparison of bribery and bidding in thin markets. Economics letters, 20(1), 1-5.

Becketti, S. (1986). Corporate mergers and the business cycle. Economic Review, 71(5), 13-26.

Beckman, C. M., & Haunschild, P. R. (2002). Network learning: The effects of partners' heterogeneity of experience on corporate acquisitions. Administrative science quarterly, 47(1), 92-124.

Belsley, D.A., Kuh, E.,Welsch, R.E. (1980). Regression diagnostics : identifying influential data and sources of collinearity. Printed book, New York : Wiley. xv 292 pp.

Bittlingmayer, G. (1996). Merger as a Form of Investment. Kyklos, 49(2), 127-153.

Boyle, J., & Winter, M. (2010). A different toolbox for M&A due diligence in China. Thunderbird International Business Review, 52(1), 55-59.

Brown, S.J., Warner, J.B., (1985). Using daily stock returns: the case of event studies. J. Financ. Econ. 14 (1), 3–31.

Brown, W. O., & Maloney, M. T. (1999). Exit, voice, and the role of corporate directors: Evidence from acquisition performance.

Burt, R. S. (1992). Structural holes. Cambridge: Harvard University Press.

Burt, R. S., & Burzynska, K. (2017). Chinese entrepreneurs, social networks, and guanxi. Management and Organization Review, 13(2), 221-260.

Burt, R. S., & Opper, S. (2017). Early network events in the later success of Chinese entrepreneurs. Management and Organization Review, 13(3), 497-537.

Cai, Y., & Sevilir, M. (2012). Board connections and M&A transactions. Journal of Financial Economics, 103(2), 327-349.

Cartwright, S., & Schoenberg, R. 2006. Thirty years of mergers and acquisitions research: Recent advances and future opportunities. British Journal of Management, 17: S1-S5.

Cashman, G. D., Gillan, S. L., & Jun, C. (2012). Going overboard? On busy directors and firm value. Journal of Banking & Finance, 36(12), 3248-3259.

Chatterjee, S., John, K., & Yan, A. (2012). Takeovers and divergence of investor opinion. The Review of Financial Studies, 25(1), 227-277.

Cheung, Y. L., Rau, P. R., & Stouraitis, A. (2012). How much do firms pay as bribes and what benefits do they get? Evidence from corruption cases worldwide (No. w17981). National Bureau of Economic Research.

Coleman, J. S. (1988). Social capital in the creation of human capital. American journal of sociology, 94, S95-S120.

Cooke, F.L. (2006). Acquisitions of Chinese state-owned enterprises by multinational corporations: driving forces, barriers and implications for HRM. British Journal of Management 17: S105–S121.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. Journal of Financial Economics, 51, 371–406.

Cotter, J., Shivdasani, A., & Zenner, M. (1997). Do independent directors enhance target shareholder wealth during tender offers? Journal of Financial Economics, 43, 195–218.

DePamphilis, D.M. (2015). "Mergers, Acquisitions, and Other Restructuring Activities", 8th edition, Academic Press, 2015 (ISBN: 97801280139)

Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2009). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. Journal of business venturing, 24(4), 287-309.

Dewenter, K. L., & Malatesta, P. H. (2001). State-owned and privately owned firms: An empirical analysis of profitability, leverage, and labor intensity. American Economic Review, 91(1), 320-334.

Di Pietra, R., Grambovas, C. A., Raonic, I., & Riccaboni, A. (2008). The effects of board size and 'busy'directors on the market value of Italian companies. Journal of management & governance, 12(1), 73-91.

Dong, M., Hirshleifer, D., Richardson, S., & Teoh, S. H. (2006). Does investor misvaluation drive the takeover market?. The Journal of Finance, 61(2), 725-762.

Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and moderation effects. Prevention Science, 10(2), 87-99.

Fan, J. P., Wong, T. J., & Zhang, T. (2007). Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. Journal of financial economics, 84(2), 330-357.

Ferris, S. P., Jagannathan, M., & Pritchard, A. C. (2003). Too busy to mind the business? Monitoring by directors with multiple board appointments. The Journal of finance, 58(3), 1087-1111.

Ferris, S. P., Jayaraman, N., & Liao, M. Y. S. (2018). Mergers and the Market for Busy Directors: An International Analysis.

Fich, E. M., & Shivdasani, A. (2006). Are busy boards effective monitors?. The Journal of finance, 61(2), 689-724.

Field, L., Lowry, M., & Mkrtchyan, A. (2013). Are busy boards detrimental?. Journal of Financial Economics, 109(1), 63-82.

Fletcher, M., & Harris, S. (2012). Knowledge acquisition for the internationalization of the smaller firm: Content and sources. International Business Review, 21(4), 631-647.

Fu, F., Lin, L., & Officer, M. S. (2013). Acquisitions driven by stock overvaluation: Are they good deals?. Journal of Financial Economics, 109(1), 24-39.

Fuhrmann, S., Ott, C., Looks, E. and Guenther, T.W. (2017). The contents of assurance statements for sustainability reports and information asymmetry. Accounting and Business Research, 47:4, 369-400.

Gargiulo, M., & Benassi, M. (2000). Trapped in your own net? Network cohesion, structural holes, and the adaptation of social capital. Organization Science, 11(2): 183-196.

Golbe, D. L., & White, L. J. (1988). A time-series analysis of mergers and acquisitions in the US economy. In Corporate takeovers: Causes and consequences (pp. 265-310). University of Chicago press.

Grave, K., Vardiabasis, D. & Yavas, B. (2012). The Global Financial Crisis and M&A. International Journal of Business and Management Vol. 7, No. 11; June 2012

Gulati, R., & Gargiulo, M. (1999). Where do interorganizational networks come from?. American Journal of Sociology, 104(5): 1439-1493.

Hackbarth, D., & Morellec, E. (2008). Stock returns in mergers and acquisitions. The Journal of Finance, 63(3), 1213-1252.

Haleblian, J.J., Kim, J.Y.J. & Rajagopalan, N. (2006). The influence of acquisition experience and performance on acquisition behavior: evidence from the U.S. commercial banking industry. Academy of Management Journal 49(2): 357–370.

Harris, I. C., & Shimizu, K. (2004). Too busy to serve? An examination of the influence of overboarded directors. Journal of Management Studies, 41(5), 775-798.

Haspeslagh, P. C., & Jemison, D. B. (1991). The challenge of renewal through acquisitions. Planning review, 19(2), 27-30.

Haunschild, P.R. & Beckman, C.M. (1998). When do interlocks matter? Alternate sources of information and interlock influence. Administrative Science Quarterly 43(4): 815–844.

Hayward, M.L.A. (2002). When do firms learn from their acquisition experience? Evidence from 1990–1995. Strategic Management Journal 23(1): 21–39.

Hines, N. Y. (2007). Cultural due diligence: The lost diligence that must be found by US corporations conducting M&A deals in China to prevent foreign corrupt practices act violations. Duq. Bus. LJ, 9, 19.

Humphery-Jenner, M., & Powell, R. (2014). Firm size, sovereign governance, and value creation: Evidence from the acquirer size effect. Journal of Corporate Finance, 26, 57-77.

Johanson, J., & Vahlne, J. E. (2003). Business relationship learning and commitment in the internationalization process. Journal of international entrepreneurship, 1(1), 83-101.

Johanson, J., & Vahlne, J. E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. Journal of international business studies, 40(9), 1411-1431.

Kagel, J. H., & Levin, D. (1986). The winner's curse and public information in common value auctions. The American economic review, 894-920.

Lehn, K. M., & Zhao, M. (2006). CEO turnover after acquisitions: are bad bidders fired?. The Journal of Finance, 61(4), 1759-1811.

Li, Y., & Peng, M. W. 2008. Developing theory from strategic management research in China. Asia Pacific Journal of Management, 25: 563-572.

Lin, Z., Peng, M. W., Yang, H., & Sun, S. L. (2009). How do networks and learning drive M&As? An institutional comparison between China and the United States. Strategic Management Journal, 30(10), 1113-1132.

Liu, B., & McConnell, J. J. (2013). The role of the media in corporate governance: Do the media influence managers' capital allocation decisions?. Journal of Financial Economics, 110(1), 1-17.

Liu, C., & Paul, D. L. (2015). A new perspective on director busyness. Journal of Financial Research, 38(2), 193-218.

Liu, Q., Luo, T., & Tian, G. (2016). Political connections with corrupt government bureaucrats and corporate M&A decisions: A natural experiment from the anti-corruption cases in China. Pacific-Basin Finance Journal, 37, 52-80.

Ljungqvist, A., & Raff, K. (2017). Busy directors: strategic interaction and monitoring synergies (No. w23889). National Bureau of Economic Research.

Lu, Y., Tsang, E. W., & Peng, M. W. (2008). Knowledge management and innovation strategy in the Asia Pacific: Toward an institution-based view.

Luo, Y. & Peng, M.W. (1999). Learning to compete in a transition economy: experience, environment, and performance. Journal of International Business Studies 30(2): 269–296.

Lyon, J. D., Barber, B. M., & Tsai, C. L. (1999). Improved methods for tests of long-run abnormal stock returns. The Journal of Finance, 54(1), 165-201.

Maney, K., Hamm, S., & O'Brien, J. (2011). Making the World Work Better, The Ideas That Shaped a Century and a Company. New York, NY: IBMPress.

Martynova, M., & Renneboog, L. (2009). What determines the financing decision in corporate takeovers: Cost of capital, agency problems, or the means of payment?. Journal of Corporate Finance, 15(3), 290-315.

Megginson, W. L., & Netter, J. M. (2001). From state to market: A survey of empirical studies on privatization. Journal of economic literature, 39(2), 321-389.

Melicher, R. W., Ledolter, J., & D'Antonio, L. J. (1983). A time series analysis of aggregate merger activity. The review of economics and statistics, 423-430.

Méon, P. G., & Sekkat, K. (2005). Does corruption grease or sand the wheels of growth?. Public choice, 122(1-2), 69-97.

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2003). Firm size and the gains from acquisitions. Journal of financial economics, 73(2), 201-228.

Nelson, R. L., & National bureau of economic research (Etats-Unis). (1959). Merger movements in American industry, 1895-1956 (No. 66). Princeton: Princeton university press.

Oliver, C. (1990). Determinants of interorganizational relationships: integration and future directions. Academy of Management Review 15(2): 241–265.

Peng, M. W. (2003). Institutional transitions and strategic choices. Academy of management review, 28(2), 275-296.

Peng, M. W. (2012). The global strategy of emerging multinationals from China. Global Strategy Journal, 2(2), 97-107.

Peng, M. W., Zhang, S., & Li, X. (2007). CEO duality and firm performance during China's institutional transitions. Management and Organization Review, 3(2), 205-225.

Peng, M.W. & Heath, P.S. (1996). The growth of the firm in planned economies in transition: institutions, organizations, and strategic choice. Academy of Management Review 21(2): 492–528.

Peng, M.W. (2006). Making M&A fly in China. Harvard Business Review 84(3): 26–27.

Pfeffer, J. & Salancik, G.R. (1978). The External Control of Organizations. Harper: New York.

Pyles, M. K., & Mullineax, D. J. (2008). Constraints on loan sales and the price of liquidity. Journal of Financial Services Research, 33(1), 21-36.

Rao-Nicholson, R., Salaber, J., & Cao, T. H. (2016). Long-term performance of mergers and acquisitions in ASEAN countries. Research in International Business and Finance, 36, 373-387.

Reagans, R., & Zuckerman, E. W. (2001). Networks, diversity, and productivity: The social capital of corporate R&D teams. Organization science, 12(4), 502-517.

Reed, F. M., Walsh, K., & Grice, R. (2002). Information acquisition for technological innovation and technology strategy in small firms. In IEEE International Engineering Management Conference (Vol. 1, pp. 137-142). IEEE.

Romei, V. & Reed, J. (2019). The Asian century is set to begin. Financial Times news article, retrieved from https://www.ft.com/content/520cb6f6-2958-11e9-a5ab-ff8ef2b976c7 on March 27, 2019.

Rosenstein, S. & Wyatt, J. (1990). Outside directors, board independence, and shareholder wealth. Journal of Financial Economics, 26, 175–184.

Ruihai, L., Hongmin, C. & Lirui, Z. (2006). Investigation on Evidence of Macroscopic Factors Influencing the Merger of Corporations in China. Management Review, 18, 50-53.

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. Academy of management Review, 26(2), 243-263.

Schwert, G. W. (1996). Markup pricing in mergers and acquisitions. Journal of Financial economics, 41(2), 153-192.

Shropshire, C. (2010). The role of the interlocking director and board receptivity in the diffusion of practices. Academy of Management Review, 35(2), 246-264.

Song, L., Yang, J., & Zhang, Y. (2011). State-owned Enterprises' Outward Investment and the Structural Reform in China. China & World Economy, 19(4), 38-53.

Stähler, F., Ryan, M., & Raff, H. (2007). The Choice of Market Entry Mode: Greenfield Investment, M&A and Joint Venture, Economics working paper. Christian-Albrechts-Universität Kiel, Department of Economics, No. 2007,19.

Sufi, A. (2007). Information asymmetry and financing arrangements: Evidence from syndicated loans. The Journal of Finance, 62(2), 629-668.

Thanos, I.C., Papadakis, V.M., (2012). Unbundling acquisition performance: how do they perform and how can this be measured? In: Faulkner, D., Teerikangas, S., Joseph, R.J. (Eds.), Handbook of Mergers and Acquisitions. Oxford University Press, Oxford UK.

Tuschke, A., Sanders, W. G., & Hernandez, E. (2014). Whose experience matters in the boardroom? The effects of experiential and vicarious learning on emerging market entry. Strategic Management Journal, 35(3), 398-418.

UNCTAD. (2007). World Investment Report 2007: Cross-border Mergers and Acquisitions and Development, United Nations, Geneva.

Vasconcellos, G. M., & Kish, R. J. (1996). Factors affecting cross-border mergers and acquisitions: The Canada-US experience. Global Finance Journal, 7(2).

Vijh, A. M., & Yang, K. (2012). Are small firms less vulnerable to overpriced stock offers?. Journal of financial economics, 110(1), 61-86.

Wang, A. (2009). The choice of market entry mode: cross-border M&A or greenfield investment. International Journal of business and management, 4(5), 239-245.

Wysocki, P. D., Tuna, A. I. & Richardson, S. (2005). Accounting for taste: Board member preferences and corporate policy choices'. MIT Sloan School of Management Working Paper, December.

Xiao, Z. X., & Tsui, A. S. (2007). When brokers may not work: The cultural contingency of social capital in Chinese high-tech firms. Administrative Science Quarterly, 52(1): 1-31.

Yang, J., Guariglia, A., & Guo, J. M. (2017). To what extent does corporate liquidity affect M&A decisions, method of payment and performance? Evidence from China. Journal of Corporate Finance.

Zaheer, A., & Bell, G. G. (2005). Benefiting from network position: Firm capabilities, structural holes, and performance. Strategic Management Journal, 26(9): 809-825.

Zhang, J., & He, X. (2014). Economic nationalism and foreign acquisition completion: The case of China. International Business Review, 23(1), 212-227.

Zhou, B., Guo, J., Hua, J., & Doukas, A. J. (2015). Does state ownership drive M&A performance? Evidence from China. European Financial Management, 21(1), 79-105.

Zollo, M., & Meier, D. (2008). What is M&A performance?. Academy of management perspectives, 22(3), 55-77.

Appendices

Appendix 1: VIF statistics of multicollinearity of the long term model:

The VIF statistics indicate whether multicollinearity is present in the model. The VIF value is expected to be no higher than three or ten (Belsley et al., 1980). Three is used as a safe measure to state that multicollinearity is not present, but actual issues with multicollinearity arise only above a level of ten. The 1/VIF statistic indicates whether tolerance levels are too low. If a 10% tolerance level is breached (1/VIF < 0.100), multicollinearity might be an issue.

Variable	VIF	1/VIF
Target Size	1.380	0.723
Multiple Dir~s	1.380	0.725
[Multiple Dir~s* Target size]	1.300	0.768
Leverage	1.250	0.799
Tobin's Q	1.180	0.846
Relative Size	1.160	0.864
Related Deal	1.150	0.869
Price-Earnings	1.100	0.906
Market-to-book	1.070	0.937
Acquirer Size	1.020	0.979
Prior Experience	1.010	0.989
Mean Value	1.180	

Appendix 2: Correlations between different CAR windows:

Variables	CAR (3D)	CAR (7D)	CAR (1Y)	CAR (2Y)
CAR (3D)	1.000			
CAR (7D)	0.876***	1.000		
CAR (1Y)	0.165***	0.234***	1.000	
CAR (2Y)	0.172***	0.227***	0.899***	1.000

*, **, ***: Correlations at the 5%; 2.5% and 1% significance levels respectively.

Appendix 3: Short term model regression without interaction effect.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CARW3	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size	0.674	0.133	5.06	0.000	0.413	0.935	***
Multiple Dir~s	0.029	0.293	0.10	0.921	-0.546	0.604	
Leverage	0.274	0.169	1.62	0.105	-0.057	0.605	
Tobin's Q	-0.138	0.114	-1.21	0.227	-0.361	0.086	
Relative Size	0.000	0.000	1.85	0.065	0.000	0.001	*
Related Deal	-1.826	0.620	-2.95	0.003	-3.042	-0.610	***
Price-Earnings	-0.002	0.002	-0.86	0.388	-0.006	0.002	
Market-to-book	-0.266	0.088	-3.04	0.002	-0.438	-0.094	***
Acquirer Size	-1.222	0.213	-5.74	0.000	-1.639	-0.804	***
Prior Experience	0.138	0.160	0.86	0.390	-0.177	0.452	
Constant	9.702	3.539	2.74	0.006	2.759	16.645	***
Mean dependent var	3.454	SD dependent var				8.778	
R-squared	0.066	Number of obs				1213.000	
F-test	8.445	Prob > F				0.000	
Akaike crit. (AIC)	8650.801	Bayesian crit. (BIC)				8706.911	

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Appendix 4: Long term model regression without interaction effect.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CARW1Y	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size	3.774	0.990	3.81	0.000	1.832	5.715	***
Multiple Dir~s	2.920	2.179	1.34	0.181	-1.356	7.196	
Leverage	1.615	1.255	1.29	0.198	-0.847	4.077	
Tobin's Q	-1.771	0.846	-2.09	0.036	-3.431	-0.112	**
Relative Size	0.004	0.002	2.22	0.027	0.000	0.008	**
Related Deal	-8.734	4.606	-1.90	0.058	-17.770	0.302	*
Price-Earnings	-0.043	0.015	-2.80	0.005	-0.073	-0.013	***
Market-to-book	-6.408	0.651	-9.84	0.000	-7.686	-5.131	***
Acquirer Size	-8.115	1.581	-5.13	0.000	-11.217	-5.012	***
Prior Experience	-0.324	1.192	-0.27	0.786	-2.662	2.014	
Constant	72.557	26.300	2.76	0.006	20.958	124.157	***

Mean dependent var	-1.007	SD dependent var	67.450
R-squared	0.126	Number of obs	1213.000
F-test	17.334	Prob > F	0.000
Akaike crit. (AIC)	13516.766	Bayesian crit. (BIC)	13572.876

*** p<0.01, ** p<0.05, * p<0.1

Appendix 5: Short term model regression with different measure of target size.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CAR (3D)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size (lowest decimal)	-2.464	0.808	-3.05	0.002	-4.049	-0.879	***
Multiple Dir~s	0.037	0.296	0.13	0.899	-0.543	0.618	
[Multiple Dir~s* Target size]	0.001	0.000	1.59	0.112	0.000	0.002	
Leverage	0.260	0.170	1.53	0.127	-0.074	0.594	
Tobin's Q	-0.126	0.115	-1.10	0.270	-0.351	0.098	
Relative Size	0.001	0.000	2.94	0.003	0.000	0.001	***
Related Deal	-1.936	0.624	-3.10	0.002	-3.160	-0.711	***
Price-Earnings	-0.001	0.002	-0.37	0.711	-0.005	0.003	
Market-to-book	-0.285	0.088	-3.23	0.001	-0.458	-0.112	***
Acquirer Size	-1.067	0.211	-5.05	0.000	-1.481	-0.653	***
Prior Experience	0.118	0.161	0.73	0.465	-0.199	0.434	
Constant	19.531	3.071	6.36	0.000	13.505	25.556	***

Mean dependent var	3.454	SD dependent var	8.778
R-squared	0.055	Number of obs	1213.000
F-test	6.368	Prob > F	0.000
Akaike crit. (AIC)	8666.403	Bayesian crit. (BIC)	8727.614

*** p<0.01, ** p<0.05, * p<0.1

Appendix 6: Long term model regression with different measure of target size.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added too..

CAR (1Y)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Target Size (lowest decimal)	-8.201	5.986	-1.37	0.171	-19.945	3.542	
Multiple Dir~s	2.797	2.191	1.28	0.202	-1.502	7.097	
[Multiple Dir~s* Target size]	0.009	0.004	2.50	0.013	0.002	0.016	**
Leverage	1.668	1.261	1.32	0.186	-0.807	4.143	
Tobin's Q	-1.677	0.849	-1.98	0.048	-3.342	-0.012	**
Relative Size	0.006	0.002	3.13	0.002	0.002	0.010	***
Related Deal	-9.418	4.624	-2.04	0.042	-18.489	-0.347	**
Price-Earnings	-0.037	0.015	-2.42	0.016	-0.067	-0.007	**
Market-to-book	-6.470	0.653	-9.91	0.000	-7.751	-5.189	***
Acquirer Size	-7.236	1.565	-4.62	0.000	-10.306	-4.166	***
Prior Experience	-0.375	1.196	-0.31	0.754	-2.720	1.971	
Constant	126.295	22.757	5.55	0.000	81.646	170.943	***

Mean dependent var	-1.007	SD dependent var	67.450
R-squared	0.121	Number of obs	1213.000
F-test	15.090	Prob > F	0.000
Akaike crit. (AIC)	13525.148	Bayesian crit. (BIC)	13586.358

**** p<0.01, ** p<0.05, * p<0.1*

Appendix 7: Short term model regression with all decimals present.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added too.

CAR (3D)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
2.980.000-	-0.175	1.080	-0.16	0.871	-2.294	1.943	
8.122.000-	2.355	1.086	2.17	0.030	0.224	4.486	**
16.400.000-	1.262	1.074	1.17	0.241	-0.847	3.370	
29.400.000-	3.404	1.090	3.12	0.002	1.266	5.543	***
48.600.000-	2.957	1.075	2.75	0.006	0.849	5.066	***
78.700.000-	2.525	1.071	2.36	0.019	0.424	4.626	**
137.000.000-	3.176	1.100	2.89	0.004	1.018	5.334	***
225.000.000-	3.227	1.109	2.91	0.004	1.052	5.403	***
422.000.000-	4.532	1.164	3.89	0.000	2.248	6.815	***
Multiple Dir~s	-0.018	0.295	-0.06	0.952	-0.596	0.561	
[Multiple Dir~s* Target size]	0.001	0.000	1.40	0.163	0.000	0.002	
Leverage	0.272	0.170	1.60	0.109	-0.061	0.606	
Tobin's Q	-0.163	0.115	-1.42	0.157	-0.388	0.062	
Relative Size	0.000	0.000	1.86	0.063	0.000	0.001	*
Related Deal	-1.829	0.622	-2.94	0.003	-3.049	-0.608	***
Price-Earnings	-0.002	0.002	-0.91	0.365	-0.006	0.002	
Market-to-book	-0.259	0.088	-2.94	0.003	-0.433	-0.086	***
Acquirer Size	-1.237	0.215	-5.74	0.000	-1.660	-0.814	***
Prior Experience	0.151	0.161	0.94	0.349	-0.165	0.466	
Constant	19.482	3.173	6.14	0.000	13.256	25.708	***

Mean dependent var	3.454	SD dependent var	8.778
R-squared	0.073	Number of obs	1213.000
F-test	4.917	Prob > F	0.000
Akaike crit. (AIC)	8659.704	Bayesian crit. (BIC)	8761.721

**** p<0.01, ** p<0.05, * p<0.1*

Appendix 8: Long term model regression with all decimals present.

The variables in this table are measured as described in the previous sections. The (ln) is no longer added to the description to facilitate easier understanding of the results. The adjusted r-squared and F-tests are added in the table as well.

CAR (1Y)	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
2.980.000-	0.494	7.975	0.06	0.951	-15.154	16.141	
8.122.000-	12.720	8.022	1.59	0.113	-3.019	28.459	
16.400.000-	-5.965	7.936	-0.75	0.452	-21.535	9.604	
29.400.000-	5.145	8.050	0.64	0.523	-10.649	20.939	
48.600.000-	-0.999	7.937	-0.13	0.900	-16.572	14.573	
78.700.000-	4.827	7.909	0.61	0.542	-10.691	20.344	
137.000.000-	16.350	8.123	2.01	0.044	0.413	32.288	**
225.000.000-	29.199	8.190	3.56	0.000	13.130	45.268	***
422.000.000-	23.047	8.597	2.68	0.007	6.180	39.913	***
Multiple Dir~s	2.095	2.177	0.96	0.336	-2.176	6.365	
[Multiple Dir~s*	0.008	0.004	2.32	0.021	0.001	0.015	**
Target size]							
Leverage	1.562	1.255	1.24	0.214	-0.901	4.025	
Tobin's Q	-1.589	0.848	-1.88	0.061	-3.253	0.074	*
Relative Size	0.004	0.002	1.87	0.062	0.000	0.008	*
Related Deal	-9.575	4.595	-2.08	0.037	-18.590	-0.561	**
Price-Earnings	-0.048	0.015	-3.15	0.002	-0.078	-0.018	***
Market-to-book	-6.227	0.652	-9.56	0.000	-7.505	-4.948	***
Acquirer Size	-8.532	1.591	-5.36	0.000	-11.653	-5.411	***
Prior Experience	-0.238	1.187	-0.20	0.841	-2.566	2.091	
Constant	137.669	23.437	5.87	0.000	91.686	183.652	***

Mean dependent var	-1.007	SD dependent var	67.450
R-squared	0.143	Number of obs	1213.000
F-test	10.502	Prob > F	0.000
Akaike crit. (AIC)	13510.582	Bayesian crit. (BIC)	13612.600

**** p<0.01, ** p<0.05, * p<0.1*